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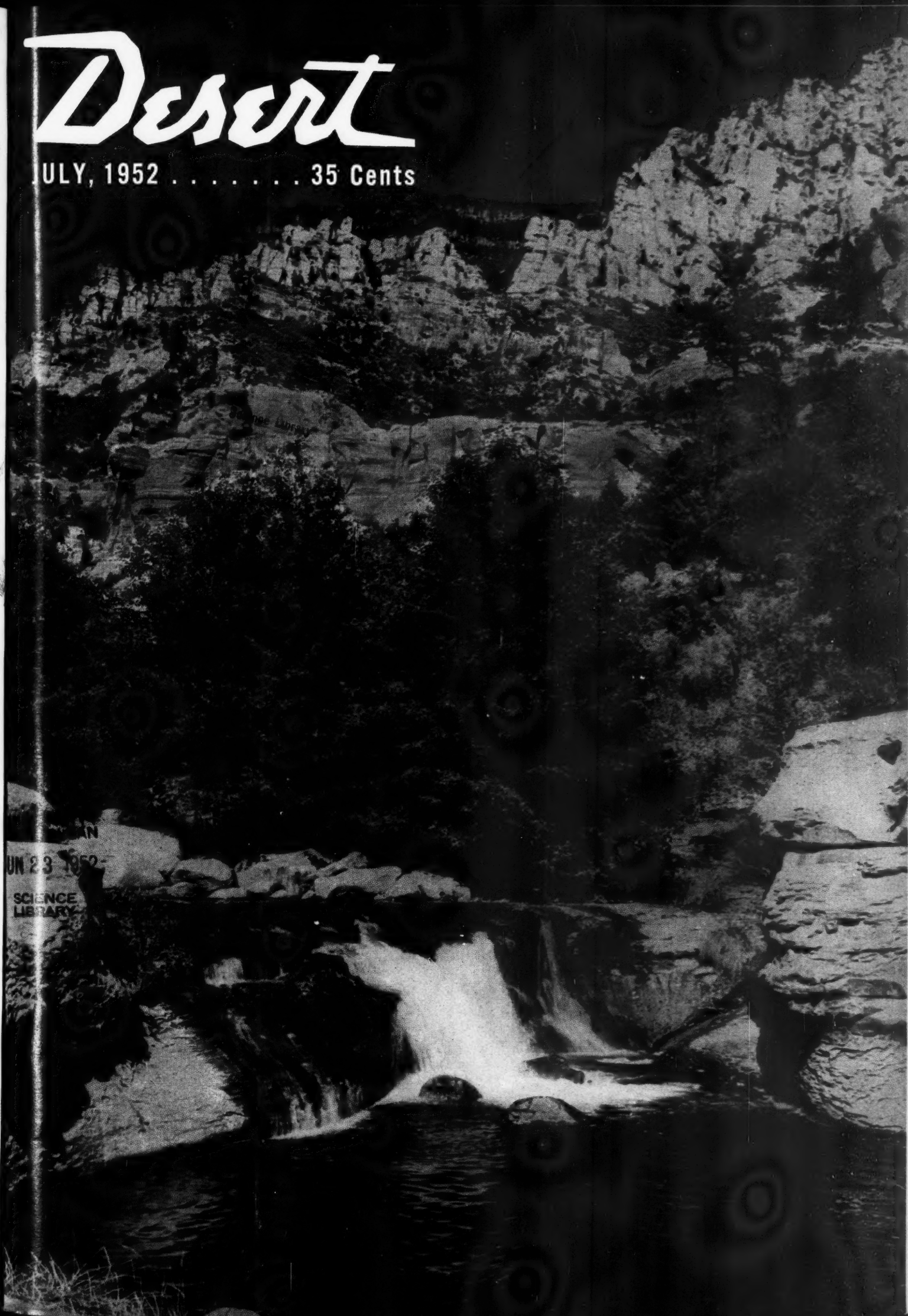
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*Death Valley through the ruins of the old Harmony Borax Works.
Photo by Alice Puster.*

TWILIGHT ON THE MESA

By JAMES F. CONWAY
San Francisco, California

The aging day is tiring and longs for night's sweet sleep,
As softly o'er the sandhills mild evening zephyrs creep;
A segment of the crimson sun still tops the mountain rim
Then—lo, retreats, and out of hiding steal the shadows dim.

Hills exchange their purple robes for gowns of darker hue,
And skies forsake cerulean tints for deeper turquoise blue.
The gentle haze of twilight smooths contours of the vale
And look! The moon climbs in the east—sober, pure and pale.

Majestic hills, long centuries old, white monuments of sand
Watch nights — with convict stealth they come—advance upon the land.
They see the days like painted maidens dance in endless line
Some ashen gray and somber, some gay with youth's red wine.

O silent ramparts of hard rock, what strangers have passed by
Since first you were volcano born and thrust up to the sky.
What travelers yet will pause here, as day begins to fade,
To wonder just as I do—by whom was all this made?

ENCHANTED HOMESTEAD

By PAUL WILHELM
Thousand Palms, California

My house—a shack under the stars and sun,
My hope, clear water flowing past the door,
That seeps in sand and stirs, when day is done,
Cool blood of plants upon the desert floor.
I hold the gold of date and grapefruit trees,
Two cows in pasture, green alfalfa rows,
Farm tools, and hives of desert honeybees;
But better still, I have the light that flows
Across the sand through curtained window panes,
The sound of Little Jeff within the shack
As happy as the flowers when it rains—
Now Dell says, "There is nothing to take back—
This heaven of a home, this land, our son—"
And David, scanning from book in the rock,
Says, "Homesteading—God knows, it's honest won,
Our daily bread, a son, this little shack—"

THE DESERT CALLING

By BLANCHE HOUSTON GRAY
Garden Grove, California

The sand of the desert is golden,
The sage has a silvery sheen;
Many and varied the colors,
Waiting there to be seen.

Go in the early Springtime,
Go when the day is fair,
Go when the flowers are blooming,
Beauty awaits you there.

Death Valley Ruins

By ALICE PUSTER
Pomona, California

Overlooking golden hills
Stand crumbling walls of sun baked clay.
The timeless blast of torrid winds
Has worn them to a grim decay.
Here man and beast alike once toiled
Sweating to make the desert pay;
While the boiling sun looked down and laughed,
Knowing it would have its way.

Time marches on, and the desert trails
That once filled men's hearts with dread,
Now lined with relics of the past,
Echo the beat of the tourist's tread.

OCOTILLO

On Highway 80

By FRANK RAMSDELL
Ocotillo, California

I am sitting outside in the patio
Just listening to the fall of the rain,
Enjoying the odor of soaked greasewood,
A perfume too delicate to name.

In a few days the purple verbenas
Will cover the mesa and dune
Phacelia will bloom 'neath the ironwood
All the desert with color will be strewn.

When the sun drops behind the high mountains
And its bright red reflects in the sky
One forgets the sand and the cactus
Just beauty alone meets the eye.

We've had cloudy days and cool weather,
A mixture of summer and fall,
But this makes one feel it's good to be here
And we love the lone place after all.

A DESERT DAY

By HORACE W. BROWNE
Redding, California

When I look upon the vastness of the desert,
Its sands rose-hued at the break of day,
The sun stealing o'er the distant ranges,
Seems to brush the shades of night away—
The magic of it entralls me.

The sun reaching the zenith of the skies,
Turning glitt'ring sands to blinding glare,
Makes me forget the petty things in life;
Makes me realize that God is there—
The glory of it inspires me.

Yet, when the day has faded into night
And the fragrance of verbena fills the air,
I lift mine eyes to star-jewelled heavens;
And from my humble heart there goes a prayer—
For its silence rests me.

In Faith

By TANYA SOUTH

Safely my life course I pursue,
Safely I wend my way.
Whatever comes, what I may do,
Or haste, or make delay,
I dwell in spiritual power
And know all Fate as just.
God holds my soul each shining hour,
And in Him is my trust.

DESERT CALENDAR

July 1-31—"Moonlight in the Indian Country." Exhibit of 20 oil paintings of Navajo and Pueblo country by H. Arden Edwards. Southwest Museum, Highland Park, Los Angeles, California.

July 3-5 — American Legion Rodeo, Cedar City, Utah.

July 3-5 — La Mesilla Fiesta, Old Town section of Las Vegas, New Mexico.

July 3-6—Hopi Craftsman Exhibit. Museum, Flagstaff, Arizona.

July 3-6—Ropers Club Rodeo, Cloudcroft, New Mexico.

July 4 — Cimarron Rodeo, Cimarron, New Mexico.

July 4—Fourth of July celebration at White Sands National Monument, New Mexico.

July 4-5 — Round Valley Rodeo, Springerville, Arizona.

July 4-5—Rabbit Ear Roundup Rodeo, Clayton, New Mexico.

July 4-6—Reno Rodeo and Livestock Show, Reno, Nevada.

July 4-6—Prescott Frontier Days and Rodeo. Prescott, Arizona.

July 4-6 — Desert Peaks Section, Southern California and San Diego Chapters, Sierra Club, hike to White Mountain Peak, California.

July 4-6 — All-Indian Pow-Wow, Flagstaff, Arizona.

July 4-14 — Sons of Utah Pioneers trek over old Donner and Oregon trails. From Salt Lake City, Utah.

July 7-8—Spanish and Indian Fiesta, Espanola, New Mexico.

July 10-12 — Ute Stampede, Nephi, Utah.

July 10-13 — Rodeo de Santa Fe, Santa Fe, New Mexico.

July 11—Dedication of Nevills Memorial Plaque at Navajo Bridge, Marble Canyon, Arizona.

July 13-August 9—Exhibition of Indian Paintings, Arizona State Teachers College, Flagstaff, Arizona.

July 14—Annual Fiesta and Corn Dance, Cochiti Indian Pueblo, New Mexico.

July 22-25 — Spanish Fork Annual Rodeo, Spanish Fork, Utah.

July 25 — Santiago Day at Taos Pueblo, Taos, New Mexico. Corn Dance.

July 25-26—Spanish Colonial Fiesta, Taos, New Mexico.

July 26—Santa Ana Day at Taos Pueblo. Corn Dance. Taos, New Mexico.



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JULY, 1952

Life on the Desert

By CHARLES BATTYE

WILLIAM HUTT and I were on the Colorado River at a locality known as Chemehuevi Valley which now lies beneath the waters of Lake Havasu, behind Parker Dam. That river valley was the home of the Chemehuevi Indians. We knew a good many of those Indians, and when, on this occasion, we were invited to go with a party of them on a desert trip we gladly accepted. Two were old friends, Hikorum and Pah-Tsaou, and they could speak fair English. The third Indian was an old man named Wee-Uss. He was a kind of witch doctor and had great influence in the tribe. The fourth was a young fellow named Pah-gin-eo. Neither of the latter knew any English.

The Indians traveled light but we took a burro along, with some grub and a bit of bedding.

We were well out on the desert in a few days. The Indians hunted mountain sheep and picked up turtles for the pot. Hutt and I prospected.

One morning we two were delayed in getting off and the Indians were quite a distance ahead of us. When we caught up with them they were standing helplessly around Pah-gin-eo who seemed to be in grave trouble. Our friends said he had been bitten by a rattlesnake and none of them seemed to know what to do about it. Well, neither did we, and Pah-gin-eo died within a few hours.

This was a tragic ending to our pleasure trip, and we wondered greatly what would happen next.

The three Indians were having a long talk and it seemed to us there was not full agreement among them. We asked Hikorum for information and he gave us plenty. We now learned that the dead youth was the son of Wee-Uss, which was news to us. Also we learned that the old man was determined to cremate his son, which was against all the beliefs and traditions of the Chemehuevis, who believed in burial. Hikorum said Wee-Uss argued like this: It was not possible to take the body back to the river; it was too long a distance. He objected strenuously to placing his boy in a shallow grave subject to future desecration by coyotes. Rather, he would violate all tribal customs and place his son on a funeral pyre, the body to be disseminated in the pure desert air. And his decision prevailed.

Well, a cremation meant lots of wood and there was no wood in sight. Did the Indians know of any, we asked? They did. So we unpacked our burro, covering our possessions with a piece of canvas weighted down with rocks. Then we lashed the body on the protesting burro. Wee-Uss looked on impassively, saying not a word. Then our little procession struck out with our burro and its gruesome load.

After considerable travel we dropped into a good-sized wash where scattered mesquite and palo verde trees of fair size were available. The old man was silent and immobile. We four went to work gathering wood and it took us some time.

When the funeral pyre was complete the Indians laid the body on it and lit the fire. After that Wee-Uss motioned all of us aside. Then he began a slow, monotonous chant, oft repeated. None of the rest of us said a word. We stood there and watched the flames consume all that was mortal of our late companion.

Here is a story of Indian gratitude, told by a man who spent many years in the lower valleys of the Colorado River. This story is one of the winning entries in Desert Magazine's Life-on-the-Desert contest in 1951. It originally appeared in the Needles Nugget in 1940.

When all was over we turned silently away. Evening was now approaching, but the sun shone as brightly as ever. There was no diminution in the song of a mocking bird perched atop the tallest cane of a scarlet-flowered ocotillo; the little wrens still flitted in and out of the clumps of cholla cactus wherein they nested; and our burro, browsing contentedly on some bunches of galleta grass had, obviously, forgotten his recent unwelcome load. Five humans alone were subdued and depressed.

One day during our return journey eastward to Chemehuevi Valley, Wee-Uss surprised us by telling his two companions to remain in camp, meanwhile beckoning Hutt and me to follow him. Mystified, we did so. Silently he led us over the hills for several miles. Coming to a halt in a shallow gulch he said, in halting Spanish, just three words: "*Poco oro aqui.*"

We knew what that meant, all right. *Oro* was the one thing we were always looking for.

There were no signs in that vicinity of solid formation, such as would be capable of carrying mineral veins. It was a region of wash gravel, so we knew he must be referring to placer gold. Somehow we never for a moment doubted his word. On a high point we built a monument for a landmark. This, together with our general knowledge of the country would, we knew, enable us to return to that spot. Then all three returned to camp.

At an appropriate time we asked the two others why the old man had shown us that place. They told us it was because he felt kindly toward us for our actions and help during the emergency.

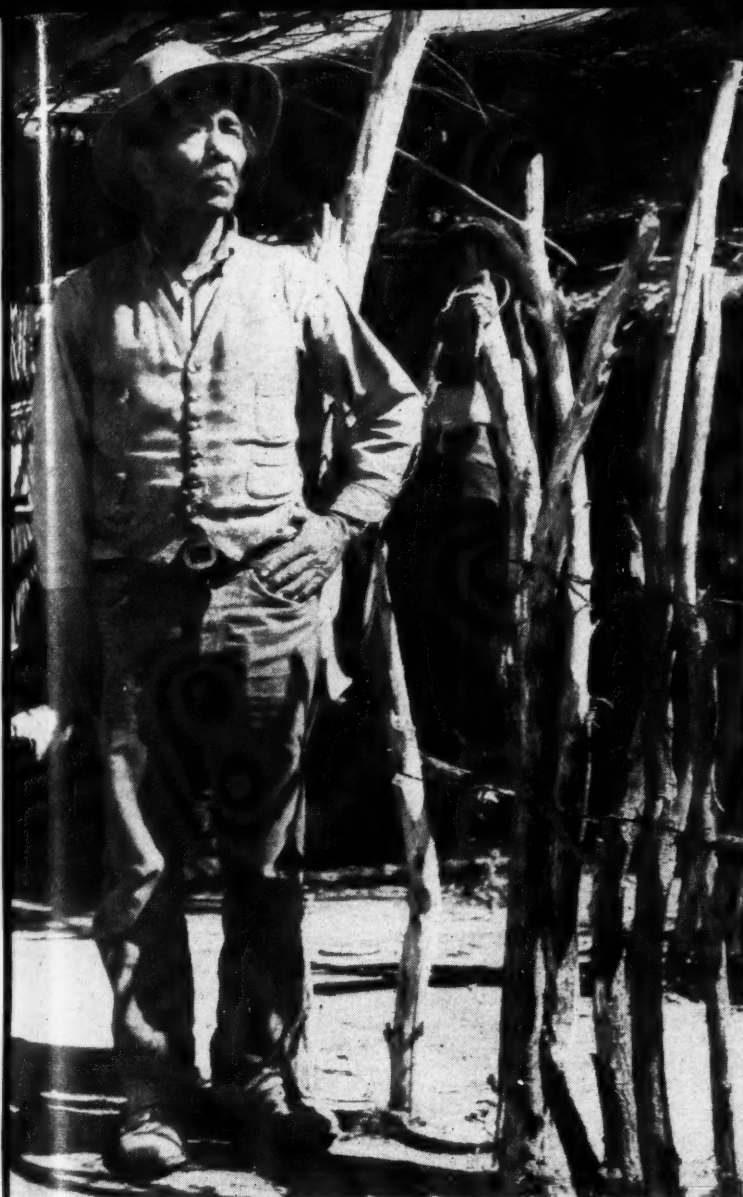
So, after all, that old reactionary, steeped in superstition and prejudice, hard as nails where the ethics of his tribal beliefs were concerned, felt the same human emotions within his breast as are common to all mankind. His natural affection for his son prompted him to respond, to the best of his ability, to what he considered a kind act.

Later we invited Hikorum and Pah-Tsaou to join us in working that placer deposit, share and share alike. But would they? Not under any consideration. They said the old man had given us that place for ourselves alone and for them to participate in any way in the proceeds thereof would mean their incurring his grave displeasure. In fact, they put it much stronger than that. So in the course of time we worked out the ground ourselves with our gold pans and a home-made drywasher. We cleaned up a good many ounces of gold but nothing spectacular, and then ate up a substantial bill of grub searching for more, but there was no more. So Wee-Uss knew whereof he spoke when he said, "There is a little gold here."

Before me, as I write, lies a man's tie stickpin, the head of which is a gold nugget. It is only a small nugget, and its intrinsic value is negligible, but it is the only material reminder of that eventful trip when six went out and only five returned, a trip of which I am now sole survivor.

The nugget was among the gold William Hutt and I recovered, the gold shown us by old Wee-Uss.

On our return to our home base at Needles I had a pin soldered to it, and it has been in my possession ever since.



Eugene Albanes, a Diegueno Indian who married into the Pai-Pai tribe and has lived for many years at Santa Catarina.



Arles Adams, left, with Chief Juan Arvallo of the Santa Catarina Indians. Juan is a friendly, intelligent Pai-Pai.

Tribesmen of Santa Catarina

After many revolts, the Indian tribesmen of Santa Catarina de los Yumas, in 1840 drove off the last of the padres and burned the mission which had been established by the Dominican fathers in 1797. For more than a century these Indians have been referred to by historians as *malo hombres*—bad men. But when a Desert Magazine party visited the Indian villages in April this year they found the natives friendly and honest. Here is a story revealing many interesting glimpses of one of the most primitive Indian tribes in North America.

By RANDALL HENDERSON
Map by Norton Allen

ONE LATE afternoon in April this year I stopped my jeep in front of a thatched hut in a little village near the lower end of the Sierra Juarez range in Baja California 115 miles south of the California border.

An aged Indian in rags and patches came out of the low doorway. He spoke a little English, but it was not necessary, for my companions, Arles Adams, Bill Sherrill and Malcolm Huey all are rather fluent with Spanish.

The chief of the tribe was away, the old man told us, but we could camp over by the rocks at the edge of the village and await his return. We accepted the invitation—and during the next two days I became acquainted with one of the most primitive Indian tribes in North America—the Santa Catarina de los Yumas.

We had left the Mexicali port of entry before sun-up that morning, and had spent most of the day following a tortuous road down the peninsula.

As part of its new road building program, the territory of the Northern District of Baja California—to become a state as soon as general elections are held—is constructing a fine paved highway parallel to the border, and extending from Tijuana near the Pacific coast through Mexicali to the Colorado River. This road has all been completed except the 4000-foot grade that climbs to the top of the Sierra Juarez on the desert side.

We followed this new paving westward to the base of the range where there was a road-block, forcing us to detour to the old Cantu grade, built by a former governor of the territory 40 years ago. The old Cantu roadway zigzags up the rocky wall with a series of hairpin turns. During the two years the new grade has been under construction no maintenance work has been done on the old road and the

12-mile climb is a nerve-racking experience, even in a jeep.

At the top of the grade we passed through the little settlement of Alaska, built in the '20s by Gen. Abelardo Rodriguez, then governor of the district, as a summer capitol. Two miles west of Alaska we left the Mexicali-Tijuana highway and followed the unimproved road which winds to the south across the plateau which is the top of the Sierra Juarez.

Most of the way it is a 15-mile-an-hour road, but despite its crooks and sand and rocks it passes through a lovely mountain terrain covered with pinyon, *Rhus ovata*, manzanita and juniper. We passed through an old placer field near La Milla and stopped briefly at a tungsten mine where the Tecate Mining and Milling company is working three shifts a day.

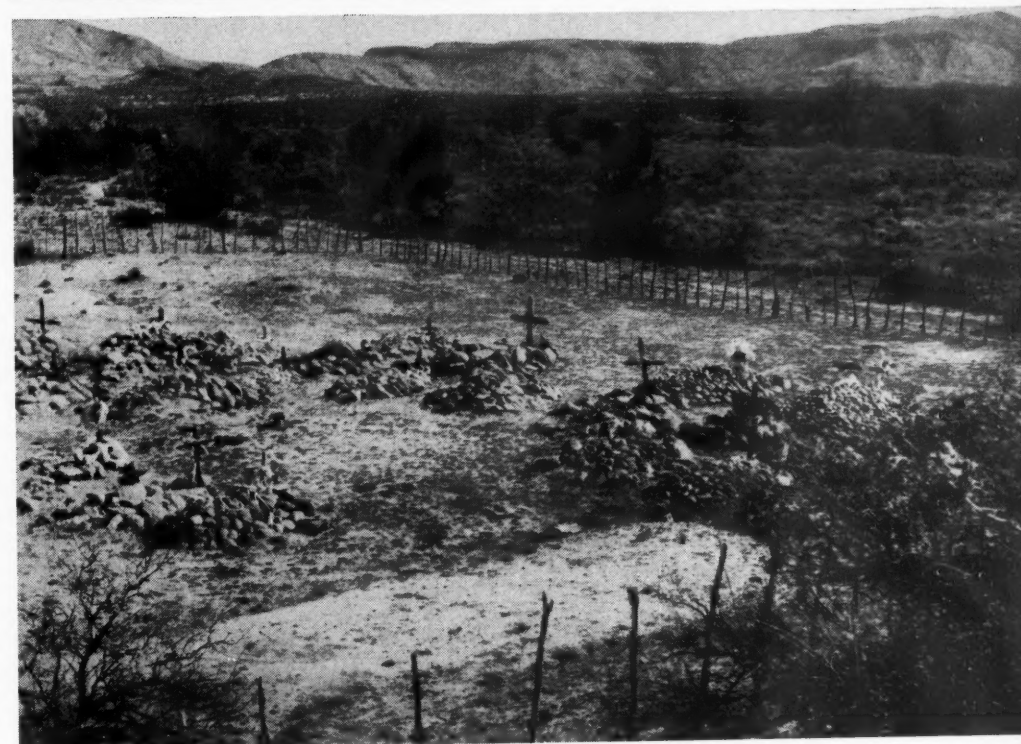
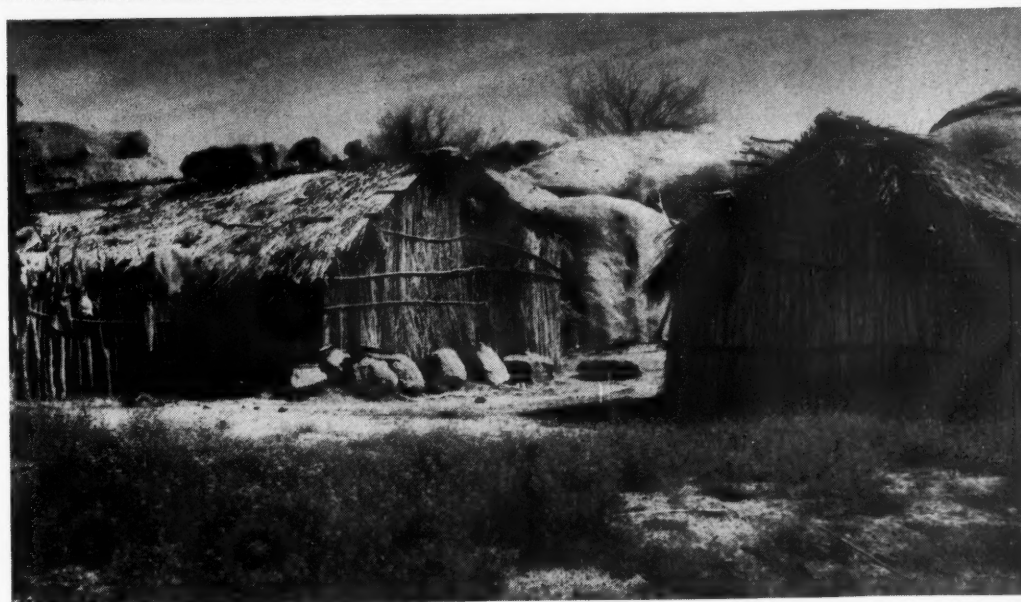
We were gaining elevation as we traveled south and the pinyon timber changed to Ponderosa pine. At noon we came to Laguna Hanson, now full of water and one of the prettiest mountain lakes in the California sierra. Fringed with pines and great white granite boulders this idyllic lake, at an elevation of 5000 feet, is little known except to hunters who go in occasionally for ducks. In recent years the lake has been nearly dry, but this season's rains have filled it to overflowing.

Five miles beyond Laguna Hanson we passed through an old saw mill camp, now abandoned. Scores of buildings bore evidence of great activity here at one time. It is surrounded by a fine stand of pines, but we were told that the Baja California market for lumber is too limited and transportation costs too high to make it a profitable operation.

Beyond the lumber camp we began to lose elevation and within a few miles had passed out of the big timber and were rolling over hills covered with a dense growth of red shank—which also has an equally descriptive and prettier name—ribbonwood.

At 115 miles from Mexicali the winding dirt road we were following joined the Ensenada-San Felipe road. There has been much talk in recent years that this road was to be paved—but it showed no evidence of improvement. It is just a winding trail through the brush—a road that could be traveled with a conventional car, but it would be slow going, and damaging to a new paint job.

Fourteen miles along this road brought us to a conspicuous landmark—*Pino Solo*. This is a great lone Ponderosa pine tree standing out alone in the bush country, many miles from any other tree of its species. On one



Top—All the Santa Catarina men have horses, but there are no wheeled vehicles in the village.

Center—Most of the 90-odd tribesmen in the Santa Catarina villages live in tulle-thatched huts.

Bottom—This cemetery, still used by the Indians, was established by the padres near their mission 155 years ago.



Above—Children of the Santa Catarina tribe. The low adobe hut behind them is the tribal chicken house.

Below—Laguna Hanson is a lovely mountain lake surrounded by pines and great white granite boulders.

of the maps it is named *Pino Grande*.

There are no maps which show all the roads we followed. The Auto Club of Southern California has the best available map for travel purposes—but it does not show the Santa Catarina mission. The Arey-Jones map is best for historical place names—but it is not an up-to-date road map.

Arles in his big-tired Chevrolet jalopy was leading the way. He had been over this route before. Just beyond *Pino Solo* he took the right fork, and 12 miles later we arrived in the old mining camp of Alamo. Placer gold was found here in the 1880s, and in 1924 a prospector located the mother

lode on the side of a nearby mountain and a mill was erected. The mill is now closed, but some of the old-time miners still work the claims for ore—and bring out enough to buy their frijoles.

During the boom days there were between 300 and 400 Chinese laborers here, and about 300 Mexicans. One of the two surviving stores is owned by an aged Chinese who was here during the gold rush. When I asked his name he answered "Mike." Mike Wah Kee has a little stock of groceries and work clothes, and once a month he drives 16 miles to the

Santa Catarina Indian village to peddle his wares.

From Alamo we headed across a rolling mesa to the old Santa Catarina mission, which was the goal of our trip. Arles visited the Indian village over a year ago. When he arrived in camp he found only women there, and was told the chief was away. While awaiting the *jefe's* return he drove up the hill to the old mission cemetery to take some pictures. He had been there only a short time when he heard a shout and turned to find four angry Indians coming toward him. They told him in no uncertain terms that picture-taking in the cemetery was taboo—at least not without the consent of the chief.

Thanks to his fluent Spanish and a generous distribution of cigarets Arles was able to appease the Indians—after he had put his camera away.

Later he met Juan Arvallo, the chief, and found him a highly intelligent and very courteous Indian. Before their visit ended Arles was invited to return and bring his friends. It was in the acceptance of this invitation that the four of us made the journey to Santa Catarina.

Arles Adams was not the first white man to clash with these Indians. During much of the 155 years since the mission was built here, the natives in this area have been regarded as *ladrones*—robbers. There are less than 100 of them in the vicinity today, but in 1797 when the Dominican Frailles, Tomas Caldellon and Jose Llorente, established this last mission in the Dominican chain in Baja California, 1500 Santa Catarina tribesmen are reported to have lived in the area.

Again and again the Indians revolted against the control of the missionaries. Finally, in 1840, they killed or drove away the last of them and burned what they could of the mission. It was never rebuilt, and today its site is marked only by mounds of earth and rocks.

James O. Pattie, trapper and mountain man, came this way in 1827 on a trek from the mouth of the Colorado River where his horses had been stolen by Cocopah Indians, to San Diego. Pattie was carried into the Indian camp on a litter, due to a foot injury. The priests were away at the time and the little detachment of Spanish soldiers on duty there put him and his companions in the guard house for a week before permitting them to go on their way.

More recently Arthur W. North, explorer and author of *Camp and Camino in Lower California*, and *The Mother of California*—both now out of print—visited the Santa Catarina

village in December, 1905. He and his companions were suspicious of the Indians, and camped a few miles down the trail. During the night the Indians stampeded their stock and concealed North's buckskin riding mule in a thicket, with an armed guard. But the North party had better arms than the natives, and by brandishing their weapons were able to recover the mule without bloodshed.

Despite the bad reputation which historians have given these Indians we had only the most friendly dealings with them. From three or four to a dozen of the men and women were in our camp all the time we were at Santa Catarina. They had every opportunity to pilfer small items of equipment—but nothing was missing.

At Arles' suggestion we had taken along some used clothing and extra groceries, and we did considerable trading with them—both barter and cash purchases—and in every instance they left it to us to place a value on the things they had to sell.

I asked Juan about their tribal names, and learned that their community included Cocopahs, Dieguenos, Kaliwas and Pai-Pais—mostly the latter.

North and other writers refer to all the Indians grouped about the old mission site as Santa Catarinas. But when I asked Juan if there were some Indians of this name he did not seem to understand what I was talking about. My impression was that Santa Catarina was the name given by the padres to all the tribesmen in the area surrounding the Mission Santa Catarina de los Yumas—but that the Indians themselves preferred to be known by their tribal names. All the Indians in the northern part of Baja California are believed to have belonged to the Yuman linguistic group, although the Indians we met at Santa Catarina do not in any sense regard themselves as Yumas. At the time Pattie passed through this region there was bitter enmity between the Cocopahs and the Pai-Pais. Today they pick cotton together in the fields of the Colorado delta.

There are two villages, the one where we camped near the old mission site, and another known as San Miguel two miles away. Over the ridge 12 miles to the northeast in Agua Caliente Canyon is another little segment of the tribe with Ramon Arvalo, brother of Juan, as chief. (*Desert Magazine*, July '51.)

The Indians live in crude but well-kept thatched tulle and adobe huts. They are making and using the same kind of earthen pottery that archeologists and pot-hunters find in the caves on the Colorado desert—the pottery

of the prehistoric Indians of Southern California.

Some of my friends who have been scrambling over the desert mountains for years seeking caves with old Indian pottery, could save shoe leather by going down to Santa Catarina where they can buy all the ollas they want, of identical make, at from 10 to 20 pesos each. A peso is now worth about 11 cents in U. S. coin.

The men at Santa Catarina braid very fine cowhide riatas. The women make carrying bags, woven like a small hammock, of agave fiber. These are slung over their backs and serve many purposes in a community where there are no wheels for transportation.

I also discovered a utensil that was new to me. It is a small netting bag, about gallon size, which the Indians said they used to get the spines off of

Above—Arles Adams, Malcolm Huey and Bill Sherrill of the Santa Catarina expedition. The ollas are being made by the Indians, as their ancestors made them for many generations. The Yucca fiber net is a carrying bag—a useful tool in a remote village where there are no wheels.

Below—Ghost remains of the old mining camp at Alamo, where millions in gold have been recovered in the last 75 years.



tunas, or prickly pear cactus fruit, before eating them. (May *Desert Magazine* cover.)

This fruit is very palatable, but the tiny spines which grow on the skin make it difficult to handle. Apparently the Indians have solved this problem. The tunas were not ripe at the time of our visit to Santa Catarina, and I did not have the opportunity to see how the bag serves as a spine-remover. I want to learn more about this utensil and its use.

The Santa Catarinas have only a meager income — but they are fine healthy-looking Indians. The men all have riding horses. They run a few cattle on the range, and do a little farming in the arroyos where there is moisture. They roast mescal buds and gather seeds from some of the native shrubs. Occasionally the men are given work by Mexican cattle ranchers in that area, and in the fall many of the Indians ride 100 miles to the Colorado delta and pick cotton for Mexican farmers.

The Mexican government established a reservation about three miles square for these Indians — but they range over the desert area for miles without much regard for reservation lines. At the San Miguel camp is a school house—the only building on the reservation made with saw-mill lumber. But there is no teacher. And that is the only grievance we heard expressed while we were with these Indians. They want a teacher for their children. The Navajo Indians in the United States have a similar complaint.

When I asked Juan about their religion he answered, "Maybe little bit Catholic." The priests seldom visit this remote village—the last time having been two years ago. Whatever may have been the faults of their ancestors, I had the feeling that these unschooled primitives, far removed from church and law, have worked out for themselves a code of religion and of social and economic intercourse which is serving them well.

Arles had a big treat for these Indians. He had loaded a portable generator in the back of his jalopy, and taken along a collapsible screen. After dinner he gave the Indians an outdoor picture show—probably the first that had ever been presented at Santa Catarina. Many of the pictures shown were the 35 mm. Kodachromes taken on his previous visit to Santa Catarina. It was a strange experience for these Indians — to see the faces of their tribesmen on the picture screen. The men smiled and whispered among themselves. The women were less restrained. They laughed and chattered in wonder and delight.

This picture program in the evening

greatly simplified the problem of securing what pictures we wanted the next day. The taboos were all forgotten—and we took several camera shots of their sacred cemetery. And it is a sacred place to these Indians. They have built a strong barbed-wire fence around it, and the graves are well kept and decorated with flowers and tinsel. Where they got the barbed wire and tinsel I do not know.

Next morning with Chief Juan and three of the tribesmen we walked up the hill to where the mission had been. Recently, the Indians, in searching for clay for their pottery, had unearthed a little kiln which they said had been used for baking the bricks in the construction of the mission. Also, they thought it had been used for smelting ore from a legendary gold and lead mine a few miles away.

Judging from the dim outlines of the walls, marked today only by low ridges of earth and scattered stones, the mission quadrangle must have been about 180 by 225 feet, with three entrances and a belfry tower in one corner.

At the time North visited the site in 1905 the old mission bell was still there—housed in a little brush shack. The Indians told us that a few years ago one of their members got drunk and sold it to a man in Ensenada.

A considerable part of the cemetery enclosure is unoccupied, the recent burials all being in one end. Time and rain have levelled the remainder of the cemetery to a smooth sandy floor. The Indians say that beneath the sand are the graves of the neophytes buried here by the padres. Also, they believe there is an underground tomb in which are the remains of the priests who met death here.

But whatever lies beneath the sand and rocks in that little cemetery is well guarded—these Indians will tolerate no intrusion. We did not ask to go inside the enclosure, but with the consent of the chief took several pictures from an outcropping of huge granite boulders on one side. On this outcrop I counted 48 grinding holes in one slab, and 19 in another. These Indians still use stone on stone for grinding their meal, but they now have portable metates in their huts.

Below the cemetery is the little creek from which the padres got their water. The creek runs dry during the summer months, and the missionaries with the help of their neophytes built an earth and stone dam to create a little reservoir. Part of the old dam is still standing. A portion of it washed away in a cloudburst storm a few years ago and the Indians obtained nine sacks of cement and replaced the

destroyed section with a stone and cement wall. A more recent storm cut through the rebuilt dam, where the old earth and stone wall joins the new construction—and today the dam is useless. We made up a little fund with which they could buy more cement.

While we were inspecting the dam one of the Indians asked us very seriously if we could tell them the name of a water monster which according to tribal legend came in periodically and devoured their ancestors. They even showed us the great boulder where one of the tribesmen at some time in the prehistoric past had slain the dragon with a spear.

It was with genuine regret that we bade goodbye to these people. Their ancestors may have been *ladrones* — but today they have virtues which we like to find in our neighbors. There are not many places in the civilized world where the buyer sets the price on the merchandise he wants.

From Santa Catarina we continued south 11 miles to the Viejo ranch, which as the name indicates, is one of the early-day cattle camps in this region. It is operated by Mexicans, who share their range with the Indians. At Rancho Viejo we returned again to the Ensenada-San Felipe road. For 30 miles we wound through pinyon, juniper and shrubs of the Upper Sonoran zone. Then through a narrow pass we looked down a thousand feet on a lovely valley carpeted with green — Valle Trinidad. At one time an American cattleman, Newt House, operated this ranch but it has now been taken over by Mexican ranchers. The floor of the valley, perhaps ten miles long and four miles wide, was covered with a lush growth of filaree, and we saw a well-kept ranch house. It had the appearance of a prosperous outfit, and with such a range it should be, despite the long rough road necessary to get livestock out to market.

We dropped down a steep grade over a rock road to the floor of the valley and headed eastward toward the Gulf of California, now about 50 miles away. To reach the coastal plain the road goes through San Matias Pass—between the southern end of the Sierra Juarez and the northern end of the San Pedro Martyrs, highest range on the peninsula of Baja California. Somewhere up in the timbered country above Valle Trinidad is the San Jose ranch of Mr. and Mrs. Salvador Meling. (*Desert Magazine*, March '51.)

San Matias Pass provides a natural trade route through the great mountain barrier which forms the backbone of the upper peninsula — giving access between the Pacific and the Gulf of California. From the days of the padres, travelers in this region all have

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GAZINE



Entrance to the cemetery established by the Dominican frailes at Santa Catarina mission about 1797. No photographers are permitted to pass beyond this gate.

mentioned San Matias — and I was eager to see this historic pass.

Actually, it is a wide arroyo draining Valle Trinidad — a luxurious botanical garden in which the plants of the Upper Sonoran zone meet those of the Lower Sonoran. We camped that night mid-way through the pass — a dry camp for there are no water-holes along the arroyo.

The elevation was 1800 feet, and the plants of the Upper Sonoran were still with us—agave, Mojave yucca, jojoba, ephedra and bisnaga. But there were also shrubs of the Lower Sonoran — Palo Verde, Ironwood, creosote, ocotillo — the two zones were overlapping at this point. Also, two of Lower California's most striking botanical specimens were here—Senita cactus and Elephant tree.

We cooked dinner that night on a fire of dead Ironwood—the best of all desert woods for campfire purposes in my opinion. At least it is the easiest to obtain when one is in the life zone where it grows.

Early the next morning we contin-

ued through the pass and out onto the great dry lake which covers the floor of San Felipe Valley. Above us towered the white granite peaks of the San Pedro Martyr range—topped by Picacho del Diablo, elevation 10,163 feet. Desert lilies were in full bloom on the bajada approaching the lakebed.

We rode across the lake at 40 miles an hour — the fastest pace we had driven since leaving the Mexicali-Tijuana road near Alaska. We stopped for an hour and filled our canteens at the Rancho Santa Clara on the edge of the lakebed, and then drove through a pass in the low coastal range that parallels the Sea of Cortez—Gulf of California. Just as we reached the little fishing village of San Felipe our road joined the new paved highway that comes down from Mexicali.

American sportsmen have been going to San Felipe in increasing numbers since the paving was completed two years ago. The primitive village of thatch and adobe huts is giving way to many modern improvements. Augie's Riviera Hotel now provides

comfortable lodging at \$4.00 for one person, \$6.00 for two.

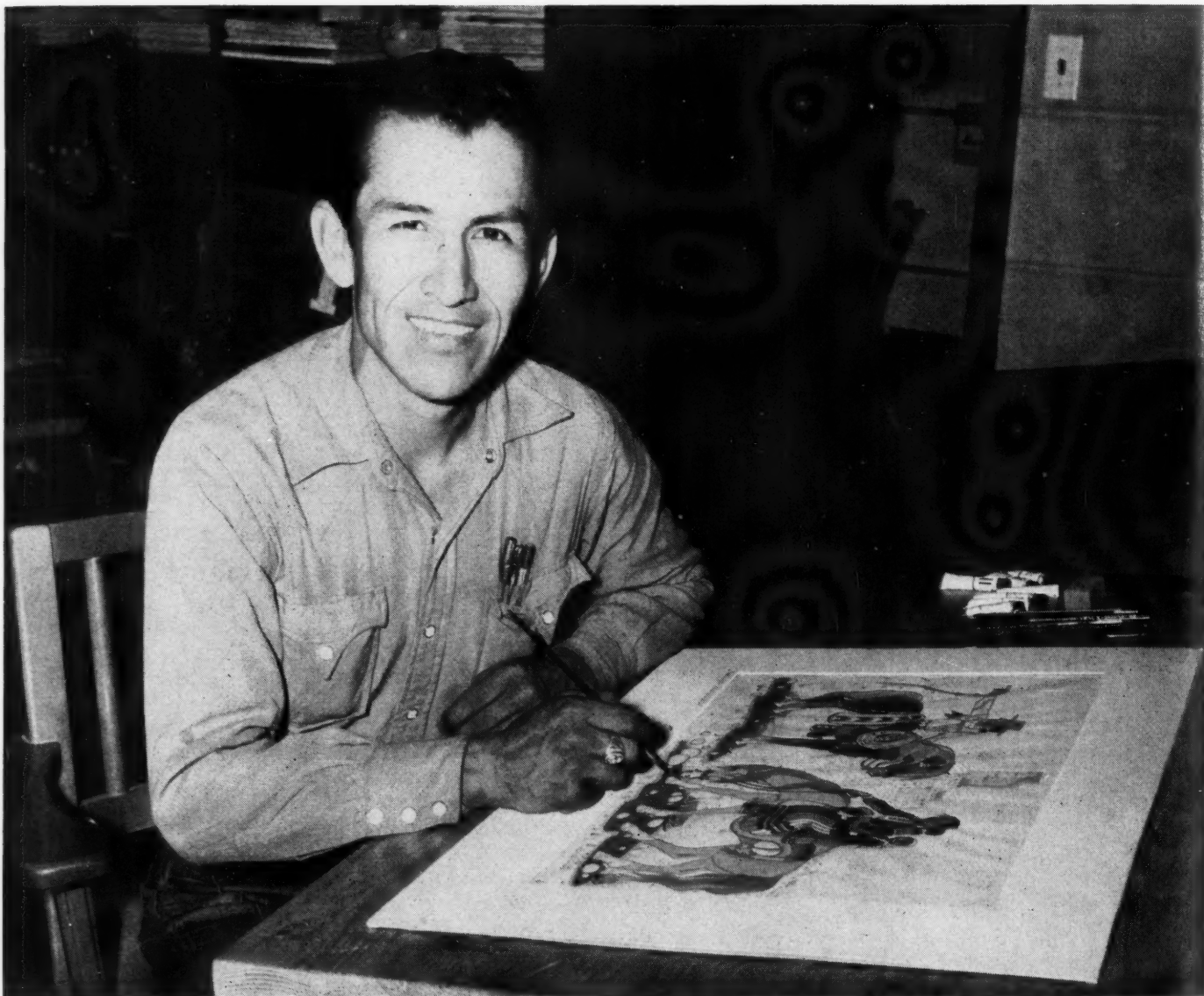
Three hours of easy driving brought us back to our starting point at Mexicali—133 miles from San Felipe. Our total distance for the round trip was 445 miles, and that included between 30 and 40 miles of side trips.

We had traveled some good roads, and some very bad roads, but the highlight of our trip were those hours we spent with the Indians at Santa Catarina. I have a great admiration for the hardihood of those padres who went out into that wild country 155 years ago and founded a mission there to save the souls of the heathen aborigines of that region.

During the 43 years the mission was open it did not appear that the Dominican frailes made much progress in converting their savage neophytes to the virtues of Christianity. But perhaps the seed they sowed in the hearts of those primitive natives are just now bearing fruit. Sooner or later I want to go back to Santa Catarina. I liked those people.



A low ridge of adobe and a few scattered rocks are all that remain today to show where the Santa Catarina mission in Baja California once stood.



Ever since he was a small boy, Hoke Denetsosie has wanted to paint pictures depicting the colorful way of life of his people, the Navajo. Now Hoke's work is gaining wide recognition, and he looks forward to the time when he can spend all working hours at his drawing board.

Hoke Denetsosie . . . Navajo Artist

By EDGAR ELLINGER, JR.
Photographs by the author

Many travelers to the Southwest have bought cartoon postcards signed "Hoke Denetsosie." The name, as well as the drawing style, intrigued Edgar Ellinger, Jr., and he resolved to learn more about this Navajo cartoonist. Here is the story of an Indian artist whose serious paintings are among the best examples of native American art.

THE INTRIGUING signature, Hoke Denetsosie (Hoak Din-et-so'-sey), appears at the bottom of many cartoon postcards sold throughout the Southwest. The cartoons, skilfully drawn, illustrate gag situations relating to the West. Seeing one, my curiosity was aroused, both by the fascinating name of the artist and his interesting style—I wanted to learn more about the man behind this pen.

Hearing that Hoke was living in Kanab, Utah, I wrote to him asking for an interview. Some time elapsed without an answer, so I sent a letter to the Kanab postmaster and asked

him if he knew where I might reach the artist. Two days later a reply came from the postmaster: Hoke was in town and an interview could be arranged. The fact that he was available was all that was necessary. I packed the jeep and headed for Utah with the feeling that there must be something more behind the artist than his facile ability to knock out cartoons.

I finally located Hoke not far from Kanab in the small town of Fredonia, Arizona. He was plastering a house for a friend and was living there while the work was in progress. He was frankly surprised at my desire to write a story about him, although he was



NAVAJO WEAVER, by Hoke Denetsosie, Indian artist.

very friendly and modestly willing to discuss his life.

Hoke is a Navajo Indian 30 years old. He is of average height, of slight wiry build. His eyes, a soft brown, reveal a tolerant and understanding attitude toward his fellow man. One feels he possesses the cheerful yet stoical outlook on life characteristic of the Indian.

Hoke stopped plastering and invited me into the living room of the tiny house.

"You know," he said, "ever since I was a small boy I have had the feeling that I wanted to paint and to express to the outside world all of the

many wonderful things about the Navajo. I want to do pictures about the Squaw and Fire Dances and really portray the Yeibichai Dances in a way that all may understand their true beauty and significance.

"My father is a medicine man, and he is well informed about the religion and beliefs of the Indian. He often asks me to tell him about the Bible, for he feels that Christianity is very close to the beliefs of the Indian, and that brotherly love and understanding are the only hope for civilization. He also knows that all the devastating wars of our generation have been predicted by the Indians. The current predictions

are kept very secret, and yet there is a prevalent feeling that some of the omens do not augur for the best."

Hoke and I talked of many things as he gradually unfolded the story of his life. He was born in the Navajo country just east of the Grand Canyon. His family's ranch lies in the wind-swept upland country of Northern Arizona where the struggle for existence has always been hard. The energies of the entire family were concentrated in keeping body and soul together. They lived in a small hogan surrounded by sheep, cattle and horses. Hoke said that it seemed natural for him to sketch the animals he knew so well. Their movements were so familiar it was easy to put them on paper. When I asked if he had any of his work with him, he brought out a beautiful painting done in tempera — a technique which combines certain qualities of both water color and pastel. He was modest about it, in spite of a blue ribbon indicating that the painting had been awarded a first prize at the Arizona State Fair in Phoenix.

Hoke has led the life of a nomad and has pursued his career as an artist in any direction fate indicated. He has great patience and is philosophically content with the knowledge that eventually he will be able to devote most of his time to the perfection of his art.

"I am more than willing to do any kind of work that is available for me," he said earnestly. "I try to be artistic in every job I do, and if I am asked to paint a sign or a billboard I do it to the best of my ability with the idea of making it as attractive as possible."

This willingness to work hard and conscientiously is characteristic of the young artist. His art reveals the careful workmanship of the technician. I remember well the murals which he painted in the Arizona Craftsman building in Scottsdale. Unfortunately this building burned to the ground a few months ago, and his work was destroyed with it.

Hoke had his first chance to show his artistic talents when he was sent to a non-reservation school in Phoenix after four years of preparatory work at Tuba City. The natural aptitude which so many Indians possess came to the surface and was soon recognized. Hoke was asked to illustrate the "Little Herder" series put out for the U. S. Government. The drawings portrayed the Indian concept of Spring, Summer, Fall and Winter and have been made available to third and fourth grade children throughout the country.

The interesting thing about Hoke's work is that he has had no formal training. His talents developed with a maximum of freedom, and his paintings have none of the tightness which often

Death Valley 49ers Plan 4-Day Program in November

Following a meeting at Stove Pipe Wells hotel May 3 and 4, directors of the Death Valley 49ers announced that the dates of the annual encampment next fall will be November 8, 9, 10 and 11.

The fixing of these dates was in accordance with a general policy for the future—the holding of the encampment annually in November on the weekend nearest to Armistice Day which is always on November 11. It was felt that the December days on which the three previous encampments were held were too late in the season, and that the November dates would provide more favorable weather for the campers who will be encouraged to attend the encampment.

With four days available for the program this year, plans are being made for a more elaborate entertainment than was held last year.

Paul Palmer, chairman of the program committee, suggested that three campfire programs be held, on Saturday, Sunday and Monday nights, and that a breakfast be arranged for Southwestern authors on Sunday morning, and for artists on Monday morning. It was also proposed that the art exhibit to be arranged by John Hilton at Furnace Creek Inn be continued for a month.

One of the features planned for the 1952 encampment will be motor tours conducted by the Park Service on Sunday and Monday to enable visitors to see the most interesting scenic and historical places in the Death Valley Monument.

Floyd Evans, in charge of the photographic exhibit again this year, stated that he planned to arrange for a competitive showing of 35 mm. color slides, and that two projectors will be provided for this exhibition.

The 49ers plan to have plenty of

wood available for camps at the 4-day program in November, and since accommodations in Death Valley are limited, visitors will be urged to bring their bedrolls and camp out on the floor of the valley.

Ardis Walker, president of the 49ers, who presided at the Stove Pipe Wells meeting, said that after staging three encampments, including the Centennial historical pageant staged in 1949, the organization has now "come closer to the earth" and will seek in future years to encourage folk activities which will have both a cultural and a recreational appeal to visitors. He and other leaders in the organization feel that this is the pattern for future encampments, and that they will be increasingly popular in the years ahead. The group is planning for an estimated attendance of 10,000 at the 1952 encampment program.

CANYON'S NORTH RIM OFFERS INTERESTING VIEWS

Most travelers to Arizona view the Grand Canyon from the South Rim; comparatively few visit the opposite side.

One of the most scenic viewpoints of the North Rim is Toroweap Point, perched on the brink of the canyon overlooking the Inner Gorge. The two walls come closer together here than at any other place in the entire canyon system.

Toroweap Point is the end of a long plateau which slopes southward from Utah. Called Toroweap Valley, it actually is a level mesa formed by volcanic debris spilling over from the North Rim. At the foot of the valley, west of the point, is Toroweap Lava Cascade, the incline where the molten lava from the erupting volcanoes poured over the rim to the Colorado River 3000 feet below.—*Pick and Dop Stick.*

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NAVAJO TRAVELERS, by Hoke Denetsosie. Hoke's home, in the vast expanses of Navajoland, provides a perfect background for the bright coloring of Navajo costumes.

is apparent in the work of art school graduates.

With his determination to continue in the art field, Hoke left Phoenix and went to Windowrock, Arizona, seat of the Navajo Tribal Council. He worked for the Navajo Central Agency and did process printing and silk screening for the Department of Education and the U. S. Government. He stayed there until the start of the last war and then returned to his family ranch to help with the chores. His brother had been drafted, but Hoke was unable to pass the physical examination. He decided he could best serve his country by helping with the sheep and cattle.

The ranch is located in the desert plains which stretch as far as the eye can see, interrupted only by flat topped outcroppings of rock and an occasional patch of stunted cedar. The forlorn aspect of the setting is a perfect background against which to paint the Navajo, colorful in their dress, resplendent in hand-fashioned silver jewelry

and turquoise. Hoke worked hard and painted hard, and when the war was over he sought new scenes and fresh experiences.

Bright Angel Lodge at the Grand Canyon was his next stop. Here a job as bell boy provided livelihood and also time in which to paint. He spent all leisure hours improving his technique. People began to notice his work. He met Hamilton Warren, head of the Verde Valley School near Sedona, Arizona, and Warren commissioned him to illustrate the school catalogue.

Hoke then became a lumber-jack in the Kaibab forest. Next he moved up into the Salt Lake City area where he worked in the Kennecott Copper Mines in Brigham Canyon. Later he settled in Kanab and became acquainted with "Dude" Larson who gave him a commission to turn out 200 post card cartoons for the tourist market.

During his many changes of work and locale Hoke never neglected his classic art. His paintings have been

exhibited in Flagstaff at the Museum of Northern Arizona, and in Las Vegas, Nevada. The U. S. Government selected him as one of five Indian artists to tour the country as part of a progressive educational program designed to acquaint the American people with the art work of the native Indian.

Jonreod Lauritzen, author of *Arrows Into The Sun*, and *Song Before Sunrise*, is an admirer of Hoke's work. In fact Lauritzen has asked the Navajo artist to illustrate a series of books he is preparing for juveniles. Much of the writing and illustrating has already been completed, and several samples of the art work have been approved by the publishers.

Hoke possesses the wanderlust of a typical Navajo and has traveled to many parts of the country. He has never married or settled down for long in one spot. Someday this may change, but at the moment he sees fit to use his artistic talents in any place where they are wanted and appreciated.

PARTS OF A PEACH BLOSSOM

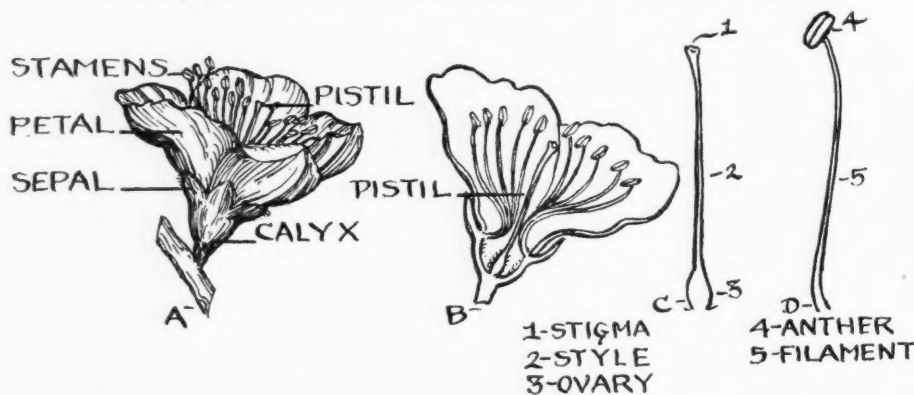


Figure 1—An elementary lesson in botany. How to read a peach blossom; A—outside parts with names; B—cross-section; C—pistil; D—one of stamens.

The Story of Flowers . . .

By JERRY LAUDERMILK
Sketches by the author

IT WAS late spring in Wickenburg and Nature's annual flower show along the Hassayampa was superb. An army of cactus, yucca, ocotillo and dozens of other plants whose names I don't know seemed about to take the town. In fact, a yucca that grew back of Bob Coolidge's quick-lunch restaurant became one of the main actors in this story.

How this yucca came to be there in the first place was anybody's guess—maybe someone planted it years before. Anyway, Bob and I waited with impatience while the plant prepared to celebrate the high point of its career with a grand demonstration. Something great was about to happen in the cluster of dagger-pointed leaves. Then one morning the flower stalk began to shoot up like some sort of slowed-down green fireworks. With a rush came the buds and then the miracle. It was majestic.

I did everything I could to make the show a success. I raked up the litter of rusty cans and chopped out some frowzy tree-tobacco that struck a false note, like hoboos in an art gallery. I sketched the blossoms from every angle including close-ups of the flowers and buds. I was proud of my drawings.

Then one evening my sketch book fell into the hands of an individual with the look of weather-beaten intelligence you see on the faces of engineers and other outdoor workers who follow a hard but interesting line. While the U. S. Forest Service man—since that's what he was—scanned my

records of dramatic moments in the career of a yucca, his expression showed that I had an appreciative critic. We became acquainted and the result was that we overhauled the history of the plant world until Bob closed up for the night.

This man knew plants from the ground up. He traced their ascent from the first green scum of the Archeozoic seas to the present. It was a panorama that made me groggy. I saw certain plants rise to power and dominate the scene for millions of years and then resign in favor of more up-to-date types. First the marine algae tip-toed out of the sea and staked their claims in the swampy line between high and low water. Ages later, some settled down to a life farther ashore but they had not forgotten their sea-going ancestors. These were little plants less than two feet high but with big names, *Rhynia Gwinne-Vaughani* and *Hornea Lignieri*. Ages later came the ferns and fern-like trees and plants with no living descendants, the *Sphenophylls*. Giant rushes and clubmosses appeared and as geologic time plodded slowly on, curious seed-bearing ferns opened up a new age, the age of trees with cones like our pines and firs, the *Gymnosperms* had arrived.

All the plants of that fantastic past made up an organization where the lower forms perpetuated their species by means of spores, tiny dust-like particles capable of reproduction. Among the higher brackets continuity was by way of seeds, but seeds still in the experimental stage. For millions of years there was not a flower on the face of the earth.

In my home section of the middle west they called you "peculiar" if they caught you sketching. This was a touchy point since with me drawing was simply doing what came naturally. It was a problem, but I had a solution. I could disguise my sketch book with a magazine cover. Later, I found that such trickery was not necessary in the far West. I had a special knack for drawing plants and like most folks I enjoyed flowers, but only from across a sort of mental Grand Canyon. That is, I didn't know them personally. To make a closer acquaintance with flowers, their private lives, family histories etc., I had to come to Arizona.

Like most folks my idea of a flower was something showy with a complete set of sepals, petals, stamens etc., like a peach blossom. Here, if you read your flower from outside inward you'll notice first five little greenish or reddish leaf-like objects, the sepals. These form the calyx, a base for the five pink petals. Inside the cup made by the petals are several pink objects about half an inch long that look something like tiny golf clubs. These are the stamens, their club-shaped tips are the anthers—the organs that make the pollen. Push the stamens aside and right in the center you notice a single, pale green, thread-like object with an expanded tip. This is the pistil, the green tip is the stigma. The pistil is the heart of the blossom. At its base, down inside, is the ovary with the egg-cell which, when fertilized by the pollen will produce an embryonic peach tree.

But flowers don't have to be as elaborate as this. Flower architecture follows many styles. Some like the wind-flower or *Anemone* have no petals. Others like the flowers of Yerba Mansa show practically nothing but bare stamens and pistils. The female flower of the castor bean is streamlined down to a simple three-sided capsule tufted by three tiny red plumes—you could hardly eliminate anything more and still call it a flower. This variety of floral design includes everything from such bold and simple compositions as those in the yucca flower to complicated gadgets with trapdoors, trick platforms that suddenly let go and spill off unwanted visitors—and, believe it or not a set of handlebars.

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AZINE

You can find all this in the flower of the common white sage, *Salvia apiana*.

Well, after you have once become acquainted with flowers and some of their secrets, it's only natural to want to know how they came to be here in the first place. Most botanists incline toward the classic theory that a flower is a modified branch with whorls of specialized leaves crowded together in a definite order at the end of particular stems. Several facts go to support this view. For instance, the petals of the common prickly pear grade smoothly into sepals and it is practically impossible to tell where petals leave off and sepals begin. Others like Indian Paintbrush, *Castilleja*, show continuous grading from sepals to green leaves like the foliage of the stem. The fact that stamens in their turn can grade into petals is shown by Blazing Star, *Mentzelia*, where the inner set of stamens are honest, straight-forward stamens, but with progression outward they become flatter and flatter, lose their anthers and finally become actual petals.

This evidence for continuous transition of stamens to petals, petals to sepals and from sepals to ordinary leaves looks so critic-proof that it's no shock when it is suggested that the modern flower evolved from the spore bearing leaves of some remote ancestor. It is assumed that the leaves of this flower-primeval grew like overlapping scales around a central stalk and formed a structure something like a pine cone. Some scales are supposed to have produced the pollen and some the egg-cells.

According to this theory, the stalk of this cone or *strobile* grew shorter and shorter. The lower scales became sterile and turned to petals while some of the inner ones became elongated and changed to stamens. The center circle of scales grew together at the edges to complete the rough sketch of a modern flower with seeds enclosed in a special capsule.

So far, the most that fossil plants have shown to uphold this view is that the extinct *Lepidodendron* tree of Carboniferous time had cones that bore egg-cells in the upper scales and pollen in the lower. Unfortunately, this tree is not an ancestor of any of our present day flowering plants.

This classic theory of flower origin from a strobile or conelet stood up well for a long time. But in recent years it has been pawed over by paleobotanists loaded with new information. A rigorous cross-examiner is Dr. Hamshaw Thomas of Cambridge University who points out some flaws in the old theory that need explanation.



Fig. 2—Present-day blossom showing steps toward complete flower. No. 1—catkin of the male willow; A—single staminate flower. No. 2—catkin of female willow; B—single pistillate flower. In willows the sexes occur in different plants. No. 3—flowers of alder, sexes are on adjoining stems; C—male flowers; D—female. No. 4—flower shoot of castor bean, both sexes on same shoot; E—male flowers; F—female; G—single male flower enlarged; H—anthers; I—female flower, simply a capsule; J—style. No. 5—single perfect but incomplete flower of Lizard's tail, a plant closely related to Yerba Mansa; K—pistil; L—stamens. No. 6—perfect and complete flower of geranium with all floral parts.

From a study of a long series of fossil plants including the more recent discoveries, Dr. Thomas suggests a new possible lineage for our flowering plants or *angiosperms*.

The first land plants were simple types like *Rhynia* and a more recent discovery from Australia called *Baragwanathia*. These reproduced by means of spores and were so simple in construction you might call them unfinished. The spores were not developed in any special organ since the spore-

cases were simply the swollen ends of the stems. Still later, some plants developed special spore cases grown together in pairs and the whole arrangement supported by the flattened end of the stem. These types had now reached a point where they bear comparison with male flowers of some modern species.

These early plants may have favored the "two household" or *dioecious* way of life, pollen being produced on one set of plants and seeds on another, an arrangement still favored by the wil-



Fig. 3—Early Devonian landscape with first land plants. From left to right: Rhynia, Psilophyton, Baragwanathia, Asteroxylon, and Hornea. These were all small, less than two feet high, reproduction was by way of spores, all bore stamp of their marine ancestors. They lived in marshy inlets near the sea. Climate was warm all over the earth. About 375 million years ago.



Fig. 4—Later Devonian plants. From left to right: Alethopteris, Calamophyton, young frond of a seed-fern, Eospermatopteris an early seed-fern the size of a small tree. Archaeosigillaria a giant clubmoss grows on land spit in middle distance, the trunk with scars at right is the same tree after it has shed its lower leaf-scales. Climate appears to have been warm and semi-arid. 345 million years ago.

lows and poplars, where some trees are male and some female. Some of the extinct types called *Cordaites* modified this system so that pollen and ovules were produced on the same plant but on separate branches, a system still popular with the oaks and alders. It is only a short step from this scheme to one found among members of the spurge family, castor beans for instance, where both male and female flowers occur close together on the same shoot with the male flowers at

the bottom and the female flowers at the top. The next step is still shorter and results in the so-called perfect flower. This can be a very simple set-up with bare stamens and pistils close together like the flowers of Yerba Mansa.

The rough idea of the modern flowering plant seed was illustrated by the seed-ferns. These were plants with fern-like habits but which reproduced by means of seeds. This was far back in the Carboniferous period, around

360 million years ago. These seeds, about the size of hazel nuts, grew at the ends of special branches. Since seeds are developed from ovules this means that ovules also grew at the branch tips. Now, some later species of seed-ferns show a modification of the branch tip with the ovules partly enveloped by a cup-shaped outgrowth from the stalk, this is called a *cupule*. Still later, some millions of years later, other plants improved upon the cupule so that it enclosed the ovules entirely

Fig. 5—A Carboniferous swamp. Left to right: Calamites or horsetail rushes of tree-size grow on low ground, fern-like plant is Lyginopteris, trees with tufts like gigantic bottle brushes are Sigillaria. Large tree at right foreground with rows of scars is Lepidodendron. Tree with smooth trunk and yucca-like leaves is a Cordaite. Fronds of an early fern hang into picture at lower right. Climate seems to have been mild to warm and moist. 270 million years ago.



Fig. 6—Scene in Texas during the Permian period. Coniferous trees are Ullmannia with cones at left, Auricularioxylon in foreground; other conifers related to star-pines and monkey-puzzle grow in a thin stand on the bare soil in the middle distance, small plants are Sphenophyllum and ferns. The lizard-like reptile with crest is Dimetrodon, beyond are Diasparactus zenos and Limnoscelus paludis. The background of bad-lands and dust-filled sky were typical of the period. Climate was dry-temperate to cold. 225 million years ago.





Fig. 7 — Somewhere in Arizona during the Triassic period. In middle distance grow conifers related to redwood and sequoias; slender tree with yucca-like leaves is a later Cordaite. Fern-like plant is Neuropteridium. In middle foreground are palmate leaves of Clathropteris and Laccopteris types related to the ferns, others are two cycads and a giant, broad-leaved fern Macrotaeniopteris. Reptile is an early pre-dinosaur. Climate was warm, dry and temperate. 180 million years ago.

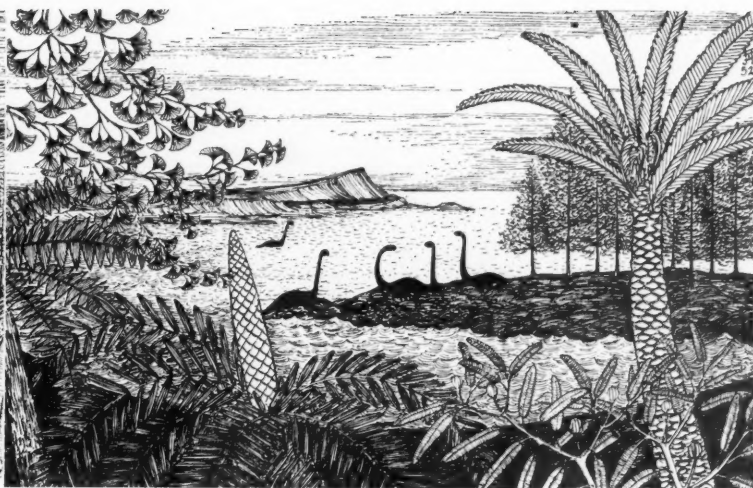


Fig. 8—A quiet bay somewhere in Kansas during the Jurassic period. Upper left, a branch of Ginkgo or maidenhair tree dangles into the picture. Cycad-like plants including the curiously branched Williamsoniella fill the foreground. In the middle distance lizard-like water reptiles Plesiosaurs bask on a rocky spit near a stand of conifers. Climate was cool-temperate to warm and seasons had begun. 150 million years ago.

and the only contact between the ovule and the outside world was by way of the pore left at the tip of the fused cupules. So here we see plants with a good many of the essentials for qualifications as flowering plants already in development as far back as the Carboniferous period.

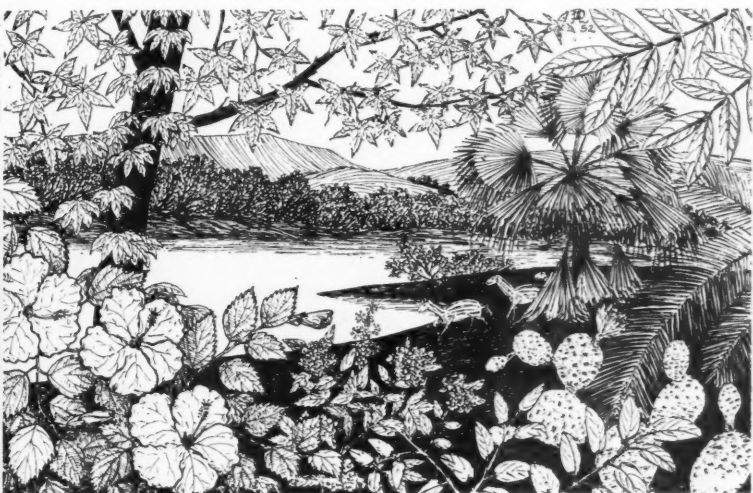
The first true flowering plants are found in the lower Cretaceous period, or 140 million years ago in rough

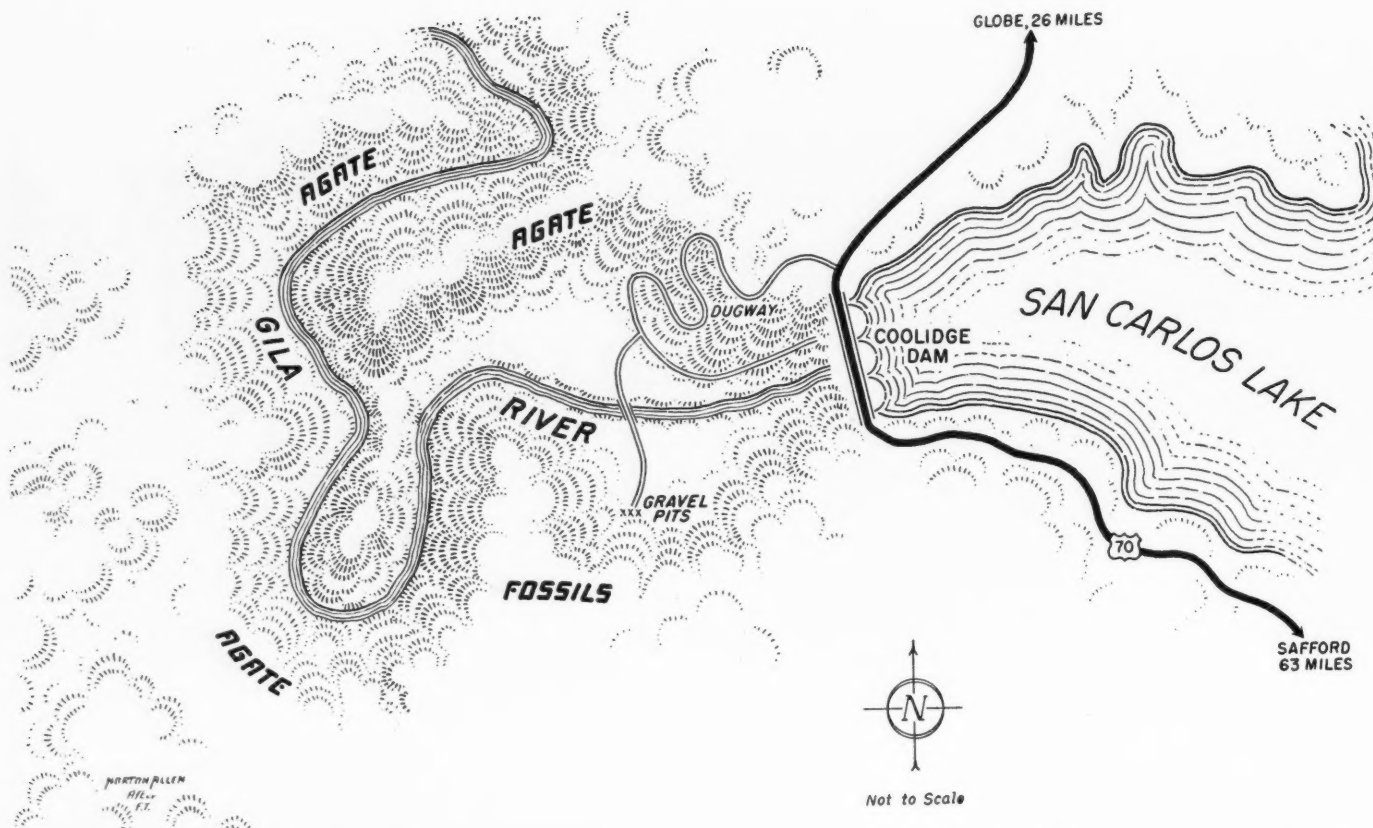
numbers. The great success and sudden rise to power of the flowering plants is one of the most remarkable events in historical geology. These early flowers are all related to families still living, mostly the buttercups, water lilies and magnolias. This suggests that the buttercup plan is probably the antique flower pattern. In any case, flower fossils so far discovered seem to throw no new light on flower ancestry. What looks like their abrupt

rise may be due to the fact that we lack important information since entire chapters are still missing from the flower story, and living flowers fail to reveal information on this point. So, all our flower acquaintances from the most unassuming violet to the regal yucca blossom are what your intuition may have whispered to you all along — mysterious characters with many dark and unsolved secrets in their background.

Fig. 9—Landscape of Cretaceous period with earliest true flowers (angiosperms): Upper right Liriodendron, (tulip tree), Alnus (alder); Lower left, Salix (willow), a modern type of Cycad (sago palm), Nymphaea (water lily), Laurus (laurel); Upper right, Magnolia. In middle distance two herbivorous dinosaurs browse on leaves of a cycamore, a third in midstream, feeds on water plants from the bottom. Climate was warm-temperate to sub tropical. 120 million years ago.

Fig. 10—Eocene landscape in Utah. Plants are familiar types. Upper left, Liquidambar (sweet gum), Lygodium (climbing fern); Lower left Hibiscus; Middle foreground, Aralia (ginseng) and Syringa (lilac). In lower right hand corner is an early prickly pear Eopuntia douglassii (1944). Frond of a cycad at right. Upper right corner, Cassia. In middle distance three early horses, Eohippi pass beneath a palmetto. Climate about like that of Louisiana. About 60 million years ago.





Agate Hunting Along the Gila

By FENTON TAYLOR
Photographs by the Author
Map by Norton Allen

DESCRIBING THE canyon dell immediately below Coolidge dam on the Gila River in Arizona, a rock collector said, "It is the only place I know in the Southwest desert where you can pick up gem quality agate with one hand and catch fish with the other."

This description sounded like a corner of paradise reserved for the rockhounds. Being a zealous collector of quartz family minerals, I visited the location without delay and was convinced that except for obvious exaggeration my friend was right. Good agate can be found in nearly every direction, and bass, perch, catfish and carp abound in the river.

Saguaro, cholla, pear and other cactus species are scattered over the encircling hills. It is truly a desert land—where you must bring your own drinking water unless you are one of the few who find the brackish river water palatable.

Last March this secluded but easily-accessible valley of the Gila River was selected for a joint field trip for members of the Mineralogical Society of Arizona, Maricopa Lapidary Society and the Gila Valley Gem and Mineral Society. Eighty-nine members of the three groups spent the day picnicking and collecting specimens.

Protected by steep canyon walls, the area is reached from Highway 70, the paved trans-Arizona route which crosses the Coolidge dam 105 miles west of the Arizona-New Mexico line. The highway generally follows the course of the historical Gila River, which was an international boundary after the Mexican war until the Gadsden Purchase in 1853 placed it entirely in the United States.

Above the dam, San Carlos lake this year contains more water than it has for many seasons. From this reservoir irrigation canals serve ap-

"A rock collector's paradise."
Fenton Taylor calls this agate location just below Coolidge Dam on Arizona's Gila River. Hunting in the lovely canyon dell beside a river abounding in bass, carp, perch and catfish, members of three Arizona mineralogical societies collected gem quality material on a joint field day last March. Here is one of those rare collecting sites — a mineral-rich area easily accessible by paved highway.

proximately 120,000 acres of fertile land in the Casa Grande Valley.

Beneath the waters of the lake is the location from which the Apache renegade Geronimo once led many of his raids. The place later became the headquarters of the San Carlos Indian agency. Here too, is the ancient Indian burial ground which became a highly controversial topic during the days when the project was being planned.

The Indians contended that the creation of the lake would inundate the graves, and thus would be a violation of their treaty rights. They refused to consider a proposal that the bodies be removed to a new cemetery.

After much discussion the tribal council approved a proposal that a concrete blanket be poured over the entire cemetery, a project which the Reclamation Bureau carried out at a

cost of \$11,000. Occasionally, in drouth years, the water level in the lake lowers to the point where the great concrete slab is visible.

Before the reservoir began filling, buildings, pipes, water tanks—anything worth salvaging in the old San Carlos settlement—were sold and removed. Retaining its name, the Indian agency was moved to the site of the Indian school at Rice, where the new town of San Carlos was built.

Completed in October, 1928, the dam was not dedicated until March 4, 1930, when former President Coolidge visited the irrigation monument to his name and delivered the dedication address.

Will Rogers was on the dedication program. Noting the heavy growth of algae on the newly created lake and the thick grass at the water's edge, he joked, "If this were my lake I'd mow it. I'd like to have the first cutting of hay here."

There was no hay to harvest the day of our field trip, and by the time we completed our study of the dam and lake, Charles E. Van Hook of Mesa, field trip chairman of the mineralogical society, was placing his stake-and-arrow markers to designate the turnoff. Rex Layton, head of the Gila Valley club, was issuing directions to parking and hunting areas.

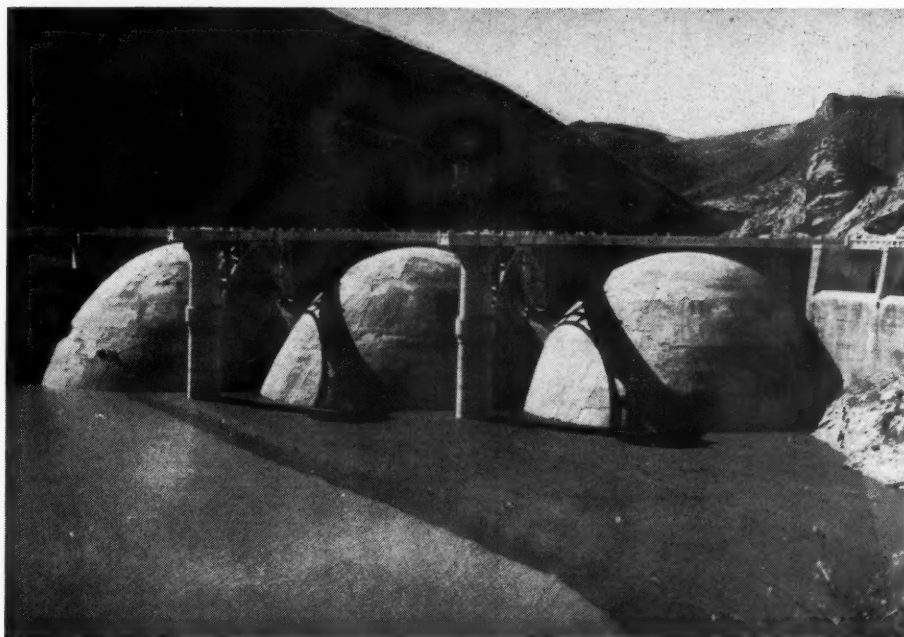
The arrows pointed to the dugway road turning south from the highway at the west end of the dam. Blasted into precipitous walls, the road is narrow but in good repair, and the descent into the canyon takes only a few minutes.

We drove down into the dell. Green grass softened the dark brown tones of the hills, and wildflowers were just beginning their spring display. Water roared down the river on its way to the farming regions around Casa Grande and Coolidge.

We crossed the narrow, wooden bridge, went through the gate and continued to the old gravel works by the east canyon wall. Here was the only parking area with room for all our cars.

Everyone was anxious to begin hunting. Shouldering specimen sacks and gripping rock hammers, the rockhounds soon were crawling over or under the barbed wire that enclosed the area. Up the hill they went, searching, scratching the earth, picking up rocks, weighing, digging, hammering and test-licking specimens.

We all walked to the south, but my group stayed closer to the river than the others. Broken pieces of crystal-line quartz and occasional fragments of agate told us we were following a previous collector's route. Even so,



Triple-domed Coolidge Dam, first and largest of this type of structure, impounds water of the Gila River for irrigation in the Casa Grande Valley. Immediately below the dam and on the hills in the background is the agate location described in the story.

as is often the case, we found some acceptable specimens.

Climbing to the top of the ridge, we could see the river looping eastward around a small butte, flowing between steep bluffs and returning westward until it almost completed a circle. Five wild ducks flew over us in search of a private swimming place.

This region along the bend, we learned when we talked with others at lunchtime, is one of the best. Someone had pried out a large chunk of red moss agate on which was a yellow plate of native copper the size of a nickel. Much of the Coolidge Dam agate contains free copper. One lapidary cut some cabochons in which the native metal gave design and beauty to the polished stones.

In the same general area another collector discovered some excellent quartz crystals, some with pale amethyst points, others showing tiny dark inclusions.

On my first trip here, I concentrated on the steep slopes and gullies west of the river. Widely scattered among the heaps of boulders were many big blocks of red and white agate—just the thing for fine bookends—awaiting the collector who can devise a way to pack them out.

Lines of vein agate can be found on the surface, but it usually takes digging to obtain good material. Gray fortification agates weather out of the brown rhyolite rock in this vicinity, and other collectors have found plume agate occasionally.

I noted a few scattered pieces of andradite garnet among the river grav-

els, specimens that were distinctly characteristic of the Stanley Butte district about 12 miles southeast of the dam.

When we returned to the camp we were delighted to see Arthur L. Flagg, outstanding Arizona mineralogist. Author of the book, *Arizona Rockhounds and Arizona Minerals*, Flagg fostered the Arizona Mineralogical Society, first of its kind in the state, and served as its president for many years. He also was instrumental in the organization of the Rocky Mountain Federation of Mineralogical Societies and served as president of this group.

Through his efforts, the mineral exhibit at the annual Arizona State Fair has become an outstanding part of the program. Now working for the State Department of Mineral Resources, he counsels small mine operators, touring the state to give generously of his friendly advice. He also spends much time working for the organization of junior mineral clubs for school children of the state.

To climax the day, the fossil hunters reported great success. From the limestone strata southeast of our location, they returned with gray rock slabs bearing plant, animal and marine fossils. Plant remains included stems, leaves and seed pods and made very interesting specimens.

After viewing the lake, the dam, the agate specimens, the mineral specimens and the fossil remains, I remembered the first description I'd heard of the dell. And I agreed—this Coolidge Dam area was indeed a rockhound's paradise.



Live-Forever (*Echeveria saxosa*) growing from a rock crevice in the Providence Mountains.

They Like a Rocky Terrain

By MARY BEAL

ROCK GARDENS are the delight of many home gardeners, and most such hobbyists choose to plant succulents among their rock specimens. These plants grow well in coarse, rocky soil, and the coloring of their fleshy leaves and stems pleasantly harmonizes with natural rock forms.

The Orpine or Stonecrop family supplies a good number of these garden treasures. Most species are foreign to the United States, many of them originating in South Africa, but rock gardeners are learning that several attractive succulents are native to the American southwest. Of these, the desert fosters some of the most ornamental varieties; others are found on bluffs along the seacoast and in foothill and mountain areas.

Several species have a record of utility as well as beauty. The Indians used the young leaves as food and for soothing poultices. Those same fleshy leaves allay thirst, as I can verify by experience. More than once on all-day

botany trips up the canyons and slopes of the Providence Mountains, I have pulled a leaf or two from an *Echeveria* rosette to chew and hold on my tongue to relieve the dryness in my thirsty mouth.

The desert species most often encountered is generally known by the common name, Desert Savior. Botanically it bears the label *Echeveria saxosa* (*Echeveria lanceolata* var. *saxosa*), and is classed also by some botanists as *Cotyledon* or *Dudleya*. But whatever the scientific nomenclature of the genus, Live-Forever is the name agreed upon for everyday usage.

The Desert Savior has a conspicuous pale gray-green rosette of thick, fleshy, erect leaves, 2 to 4 inches long, usually lanceolate in outline and tapering to a long point. The young inner leaves are veiled with a pronounced bloom, which wears off with age.

From this tufted cluster the flower stems rise, 6 to 15 inches high, branching above into a flat-topped cyme. The small widely-spaced stem leaves are bract-like, sharply pointed, with a broad clasping base. The yellow tubular corolla, emerging from the red calyx, and the pale herbage form an exquisite color pattern against the rocks. I know several rocky slopes and canyons in the Providence Mountains adorned by a bountiful array of these eye-catching succulents. On one easily accessible steep slope the Desert Savior dominates as fascinating a rock garden as any landscape architect could design.

Even when rain has been scanty you'll find these Live-Forevers. The

juicy leaves retain moisture for a long time and keep the plant alive under adverse conditions. Dr. Frederick Coville in his *Botany of the Death Valley Expedition*, issued in 1893, reported that specimens of this *Echeveria* collected in the Panamint Mountains, when examined 15 months after the dates of collection, still bore fresh leaves that had formed while the plant was drying. Two of my own specimens displayed that remarkable tenacity of life by developing new leaves after months in my flower press and longer yet in the herbarium boxes.

The Desert Savior grows in delightful abundance at altitudes of 3000 to 6000 feet in the Old Dad and Providence Mountains of the eastern Mojave Desert, the Panamints and the desert ranges of the northern border of the Colorado Desert. Some botanists also list the Desert Savior for Arizona, which could refer to a closely-related species common in central Arizona, *Echeveria collomae*. This is usually a larger plant, both in flowers and rosettes. The bright red calyx and clear yellow corolla make it a very decorative plant and a desirable addition to cultivated gardens.

Echeveria arizonica is found in western Arizona on cliffs up to 2500 feet. Its ovate-lanceolate leaves are abruptly pointed and the corollas deep-red to apricot-yellow.

Echeveria lanceolata is rather rare on the desert in general but fairly common in a few chosen localities of the western Colorado Desert. The leaves are lanceolate to oblong-lanceolate up to 4 inches long, veiled with a noticeable bloom. The stout flower stems are 6 to 15 inches high, the corolla reddish-orange and calyx greenish. I once found an alluring natural garden of it in Whitewater Wash.

AMATEUR BOTANIST FINDS NAME SYSTEM CONFUSING

To most wildflower enthusiasts, the loose application of common names is a confusing annoyance. Most of the more familiar plants have more than one common name; in the Southwest many single varieties are designated in English, Spanish and one or more Indian languages.

In an effort to avoid confusion and to establish a uniform method of nomenclature, botanists have developed a system using descriptive Latin names. But these are usually too technical for the layman.

Natt N. Dodge, in *Flowers of the Southwest Deserts* urges flower lovers: "Be serious about plant names—but not too serious. The visitor to the desert who has a normal pleasure in nature is interested in flowers because of their beauty, not their names."

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AZINE



Pictures of The Month

Gecko Lizard . . .

This quizzical little fellow is a variegated ground gecko or banded gecko lizard. Richard Randall of Tucson, Arizona, was awarded first prize in the Desert Magazine photo contest for this portrait study, taken with a 4x5 Graphic View camera, Super XX film, 1/10,000 second at f32.

Beavertail . . .

Along Highway 395, three miles east of Ridgecrest, California, E. Graham Westmorland of China Lake spotted a beavertail cactus in bloom. Using a Speed Graphic camera, Super XX film, 1/25 second at f32, Westmorland took this picture and with it won second prize in the May photo contest.



JULY, 1952

Mines and Mining

Goldfield, Nevada . . .

Goldfield Consolidated Mining Company has disposed of all its shares in the Goldfield Deep Mines Company, it was disclosed in the firm's annual report to stockholders. At one time Consolidated held well over a million shares of Deep Mines. The company never played an active role in the Goldfield Deep Mines operation, although some of its ground was explored as part of a Deep Mines program.—*Tonopah Times-Bonanza*.

Pioche, Nevada . . .

Ferro manganese will be produced from the Combined Metals Company mines at Pioche for use by the Pioche Manganese Company in its operation at the Basic Magnesium plant in Henderson, Nevada. Furnaces for smelting the ore are being installed, and future plans call for construction of a smelter, possibly of lead and zinc ores. Whether the establishment of the processing unit at Henderson will have capacity to accept and treat manganese ores from the northern part of the state has not yet been determined. It is believed that the Pioche mines will be able to supply enough ores to reach capacity.—*Caliente Herald*.

Wenden, Arizona . . .

General Services Administration will establish a manganese ore collection depot at Wenden, to be used for the purchase and collection of the vital defense metal of which there are large reserves in the Wenden area. Construction of the depot is expected to begin almost immediately. The government agency also is considering the establishment of a beneficiation plant in the same area.—*Wickenburg Sun*.

Winnemucca, Nevada . . .

Virgin Valley district of northern Humboldt county, which has produced some of the best gem opal in the United States, was found in 1950 to contain uranium minerals. "But," the U. S. Geological Survey now reports, "the uranium content ranges from .002 to .12 percent, insufficient to warrant economic development at present prices. The possibilities of finding economically minable material by additional exploration of known uraniferous layers are not considered good."—*Humboldt Star*.

Trona, California . . .

While serving with the Marine Corps in the Barstow, California, area, Geologist Eugene Lawrence spent spare hours prospecting on the desert. Now his exploration has paid off with a tungsten mine 26 miles southeast of Trona. He has three men assisting in the operation of the mine, which he has named the White Dollar.—*Mining Record*.

Tonopah, Nevada . . .

Historic Smoky Valley, adjacent to the Round Mountain gold district and 70 miles north of Tonopah, is the scene of active tungsten exploration. Warfield, Inc., is developing a scheelite deposit on the Tungsten View claim of the Meyers-Thomas property; Newmont Mining Corporation has started exploration work on a group of claims in Ophir Canyon, and numerous prospectors and small operators are active in the region.—*Pioche Record*.

Reno, Nevada . . .

Although selection of a site has not yet been made, Kaiser Corporation has announced it will build a new Nevada mill to process fluorspar, a critical mineral in the production of aluminum metal. Some of the fluorspar will come from the recently-acquired Baxter Mine near Gabbs, the announcement said, but the mill will be of sufficient capacity to handle additional ore purchased from other Nevada deposits.—*Pioche Record*.

Lackawanna, Nevada . . .

The Baltimore Camas Mine's tungsten mill at Lackawanna is installing machinery preparatory to beginning processing operations. The mill has been set up principally for tungsten but with additional equipment will be able to handle other ores, probably lead and zinc. It will serve mines within a radius of approximately 400 miles.—*Ely Record*.

Yerington, Nevada . . .

Stripping operations have been started at Anaconda Copper Company's development at Yerington. It is estimated that between seven and 10 million yards of overburden will be removed before production of the copper ore gets under way.—*Battle Mountain Scout*.

Battle Mountain, Nevada . . .

Early development of the Nubian turquoise mine in Klondike, Nye county, is planned by Norman L. Heikes of San Francisco and Burton Riggs. The Nubian is said to contain a rare occurrence of gem-quality turquoise in which the deep blue of the stone lies in a black matrix of silver ore. The property was discovered in 1924 and has been worked intermittently since that time.—*Battle Mountain Scout*.

Indio, California . . .

As part of the \$65,000,000 expansion program that will increase Kaiser Steel Corporation's pig iron output by 50 percent and raise steel ingot production by more than 11 percent, ore mining at Eagle Mountain, 75 miles east of Indio, will be stepped up. After major additions to the mining, housing, ore crushing and separation facilities at the mine, it is expected production will increase 50 percent.—*Date Palm*.

Benson, Arizona . . .

A new mill for the processing of fluorspar ore will be constructed at Benson "in the very near future," according to Morris Albertoli of Owens Valley, California, representative of the Lone Star Mining Company. Fluorspar ore is being stockpiled at the company's Lone Star Mine, in the foothills of the Whetstone Mountain range six miles west of the Apache powder plant, for processing at the contemplated mill.—*San Pedro Valley News*.

Shiprock, New Mexico . . .

Purchase of uranium mining rights on the Navajo Indian reservation in the four-corners area of Arizona, New Mexico, Colorado and Utah has been announced by business partners of Senator Robert A. Kerr, Democratic presidential aspirant. Properties and equipment of the Navajo Uranium Company, including an ore sampling plant at Shiprock, have been acquired by the Kerr-McGee Oil Industries of Oklahoma City, Oklahoma. — *New Mexican*.

Silver Peak, Nevada . . .

Daily development at Mohawk Mine in the Argentite district 10 miles west of Silver Peak in Esmeralda county gives rise to speculation that the silver-lead mine eventually will become one of the biggest producers in that part of the state. Seven men presently are employed at the mine, and timber is being hauled in to build a camp for 20 more workers.—*Pioche Record*.



The Apaches swooped down on the Papago miners, killing many men, women and children and leaving the mission settlement a smouldering ruin.

Lost Mine With the Iron Door

By JOHN D. MITCHELL

Illustration by
Charles Keetsie Shirley
Navajo artist

When two employes of Monton Air Base near Tucson, Arizona, found the rusty remnants of an ancient Spanish forge high on a ridge of the Santa Catalina Mountains, they considered it only an interesting reminder of Conquistadore days in the Southwest. But John D. Mitchell, an authority on lost mines and buried treasure of the West, thinks it is a clue to one of the most fabulous of lost treasures—The Mine with the Iron Door.

ON A RECENT outing in the Santa Catalina Mountains near Tucson, Arizona, two employes of nearby Monton Air Base discovered the rusty parts of a blacksmith forge made in Madrid, Spain, and carrying the date, 1757.

The two men knew little about mining and had heard nothing about the Lost Escalante Mine made famous by Harold Bell Wright in his novel, *The Mine with the Iron Door*. But their find may be the clue which someday will lead to the rediscovery of lost Spanish treasure.

The Mine with the Iron Door, as the Escalante has come to be called, is believed to have been found and worked for many years by Father Silvestre Velez de Escalante, a Jesuit

priest who at one time was assistant to Father Eusebio Kino at Mission San Xavier del Bac near Tucson. Although the principal occupation of the Jesuits was to store up treasures in Heaven by spreading the gospel among the plains Indians and the wild pagan tribes of the northern hills, the good fathers were not averse to storing up treasures on earth against the proverbial rainy day. In doing so, their treatment of the neophytes under their charge occasionally caused the Indians to rise in revolt.

According to old church records, the Escalante Mine was in full operation in 1767 when Spanish King Charles III issued the edict expelling the Jesuit Order from Spain and all her possessions. The Jesuits fought

the expulsion decree for a number of months, meanwhile continuing to recover gold from the fabulous mine high in the Santa Catalina hills and from placer operations along the Canada del Oro. But they were not permitted to take any of their treasure out of the country.

The Jesuits undoubtedly had foreseen the possibility of their being unable to remove any of the treasure from the country, and they decided to hide it in some secret place until they could return for it in safety. Old Spanish records in possession of Tucson citizens, and Papago legends handed down by word of mouth from father to son, indicate that a large number of Indians were employed in building a hiding place for the treasure. Accord-

ing to reports, the treasure vault was near the south bank of the Canada del Oro. The ruins of the old camp and the foundations of the little chapel where the priests said mass may still be seen.

In June, 1769, while most of the Indian miners and their families were celebrating San Juan's Day, a large band of Apache Indians swooped down from the surrounding hills and killed great numbers of Papagos. The

mission and most of the houses were almost completely destroyed and were never rebuilt. The mines were abandoned after the raid, and many priests of other outlying missions were killed before they reached the ships waiting to carry them away.

An old Mexican merchant who ran a little grocery store on North Sixth Avenue in Tucson, just north of the present underpass, many years ago had in his possession a faded waybill that purportedly gave directions for finding the Escalante Mine. According to this document, the mine was located about one league northwest of the *Ventana*—a natural hole in the rock resembling a window. When the Indian miners stood at the mouth of the tunnel, they could look to the southeast and see through this window.

Old Steve, an Indian *vaquero* who for many years rode the Santa Catalina range, was jogging along on his pinto one windy day when he was startled by a moaning sound coming from a patch of brush near the trail. Investigation proved that the wailing was caused by the wind blowing across a small hole on the side of the high ridge he had been following. The hole turned out to be the entrance to a large tunnel, in places stopped almost to the surface. On the floor were piles of ore that had been broken up and made ready for the pack trip down to the arrastres, evidences of which still stand on the south bank of the Canada del Oro near the ruins of the mission. Great clusters of bats were hanging upside down from the walls and ceiling. Although the old cowpoke talked freely to his Indian and Mexican friends about his find, he refused to take anyone to the site.

Lost mine and buried treasure hunters throughout the Southwest believe that much of the gold found in the Canada del Oro by the Spanish *Conquistadores* came from the Escalante Mine. The heavy rains that fall in the Catalinas every year still wash grains of bright yellow gold down from the hillsides into the Canada del Oro, where it finally settles to bedrock.

The millions of bats that emerge from forgotten mountain tunnels and stopes each evening from April to late October to search for food in the Catalinas, and the accidental discovery of the old Spanish forge high on a windswept ridge may be the clues that eventually will lead someone to the fabulously rich Mine with the Iron Door and to the Jesuits' lost treasure house on the banks of the Canada del Oro.

Desert Quiz

Here's the July test for the Quiz fans. So get a pencil, relax in an easy chair, and find out how much or how little you know about the Great American Desert. Even if you get a low score it will not be time wasted for you will have learned something about the most fascinating region in the United States. Twelve to 14 correct answers is good, 15 to 17 is excellent, 18 or over is superior. The answers are on page 34.

- 1—Bitten by a tarantula, an old-timer on the desert would: Get a doctor as quickly as possible..... Apply a tourniquet and try to draw poison from the wound..... Go to bed and put cold packs on the wound..... Address a few uncomplimentary remarks at the insect and forget about it.....
- 2—One of the following ghost towns is not in California: Ballarat..... Rhyolite..... Calico..... Tumco.....
- 3—The legendary god Tahquitz of the Cahuilla Indians lived in a cave on: San Geronimo Mountain..... Santa Rosa Mountains..... San Jacinto Mountains..... San Ysidro Mountains.....
- 4—Pipe Springs National Monument is in: Arizona..... Utah..... Nevada..... California.....
- 5—Correct spelling of the name of one of the most common plants on the desert is: Ocotillo..... Ocotilla..... Ocatillo..... Ocatilla.....
- 6—When you hear a botanist talking about Larrea, he is referring to what you and I call: Smoke tree..... Ironwood..... Creosote bush..... Arrowweed.....
- 7—Deglet Noor is the name of: An Indian village on the Hopi Mesa..... A famous chieftain of the Navajo Indians..... A species of date grown in the California desert..... A peak in the Wasatch range of mountains.....
- 8—If the man at the service station informed you that you were in the Escalante Desert you would know you were in: Nevada..... Arizona..... New Mexico..... Utah.....
- 9—Galena is an ore of: Gold..... Lead..... Silver..... Copper.....
- 10—Lieut. Ives is remembered for his: Famous camel train..... Exploration of the Lower Colorado River..... Campaign against the Apaches..... Discovery of Death Valley.....
- 11—Hohokam is the name given: One of Arizona's highest peaks..... A county in Nevada..... A prehistoric tribe of Indians..... A dialect spoken by the Mojave Indians.....
- 12—Headwaters of the Little Colorado River are in the: Wasatch Mountains..... Rocky Mountains of Wyoming..... Sangre de Cristo Range in New Mexico..... White Mountains of Arizona.....
- 13—A packrat's nest generally is made of: Sticks and twigs..... Galleta grass..... Rocks..... Feathers.....
- 14—If the famous Bird Cage theater was still operating you could witness its theatricals by going to: Virginia City..... Tombstone..... Carson City..... Searchlight.....
- 15—Phainopepla is the name of a desert: Bird..... Lizard..... Plant..... Rodent.....
- 16—If you came to a sign which read "Tinajas Altas" you would know you were on the old: Butterfield Stage road..... Mormon Trail to Utah..... Bradshaw road..... Camino del Diablo.....
- 17—If you were to prepare a tender mescal bud for food, Indian style, you would: Roast it in a pit..... Barbecue it on an open fire..... Boil it in water..... Eat it raw.....
- 18—Indians who refer to themselves as *Dine*, meaning "The People" are: Hopis..... Apaches..... Navajos..... Pimas.....
- 19—Coolidge dam is on the: Salt River..... San Pedro River..... Gila River..... Virgin River.....
- 20—Death Valley Scotty's partner in the building of Scotty's Castle in Death Valley was: James Scrugham..... Albert M. Johnson..... Borax Smith..... Shorty Harris.....

Letters

How Many Rattles? . . .

El Monte, California

Desert:

You may know your stories, but you don't know your rattlesnakes.

On page 34 of the May *Desert* appears an item which states "such phenomenal rattles (with a dozen and a half or two dozen segments) are never seen in Nature."

I have killed rattlers with 19 and 20 rattles, and Charles Mitchell of Salt Lake City, Utah, has a string with 52 rattles. I have seen it and counted them. The snake came from Texas.

The button on a rattle indicates two years of age, and each rattle segment thereafter signifies one year.

C. S. JUDD

They grow things big in Texas, but Mr. Mitchell's 52-rattle snake still is phenomenal. According to Karl P. Schmidt and D. Dwight Davis of the Field Museum of Natural History, authors of "Field Book of Snakes," a rattler with a string of more than 20 rattles is extremely rare "although they are sometimes faked by slipping parts of several rattles together." Not only is a long rattle cumbersome and easily broken, but it does not rattle properly and hence would be much less useful than a shorter one. Snake Experts Schmidt and Davis say a rattlesnake adds a "joint" to its rattle each time it loses its skin "which it does three or four times a year or oftener—not just once." So, even if an adult snake did retain all its rattles, it would seem its age still would be its own secret.—R.H.

The Hobby that Grows . . .

Santa Fe, New Mexico

Desert:

We certainly know what Mrs. Ona Forsberg was talking about when she described her rapid conversion to rock-hounding! (Letters, May *Desert*.) And we warn her, as time goes on she might expect anything in the way of expansion—at least judging from our experience.

Just two years ago, we bought the first glass case to display a few choice mineral specimens. Today there is a room full of cases, shelves, tables, rock cupboards and one fluorescent cabinet devoted to our hobby. One bedroom is given over entirely to lapi-

dary machinery and work benches. Our refrigerator was moved from the service porch to accommodate a slabbing saw set-up, and the sitting room now is used for picture and slide equipment, a microscope and micromounts. Piles of rocks occupy the porch floor and a shed which had to be built in the back yard.

We hope Mrs. Forsberg can look into the future and prepare for similar expansion before the hobby moves her family out onto the street!

MISS MARIE ALMAND

MISS ORA D. ORME

The "Unknown" Graves . . .

Red Mountain, California

Desert:

In the photographic feature, "In Memory," on facing pages 22 and 23 of May *Desert Magazine*, I notice two photos taken in this district. One is captioned, "Photo taken near Randsburg," the other "An unknown grave on the California desert."

Sorry, but there is no one buried at either place.

About four years ago, I was talking to a San Bernardino County deputy sheriff about those same two places. In his opinion, if such graves had once existed, the county coroner would have removed the remains to Potter's Field, as neither was in a designated burial ground.

Be that as it may, here is the story:

In May or June of 1941, two Mexicans, driving an ancient model Ford innocent of top, brakes and lights, left Red Mountain for Trona, where they were employed. After an evening of rather unwise and much too thorough celebrating, they started north down the Trona road. About half way down the hill, three miles or so from Trona and at the place where one cross was located, they smashed into a large and heavy Auburn sedan.

The Auburn and one of the Mexicans weren't badly damaged. The other Mexican promptly left this earth, and the Ford was a total loss.

About a week later, the small black cross shown on the left in your photo appeared at the spot. The following spring the larger one with the wreath joined it.

Made of boards, chicken wire and stucco and painted white, it was a right nice looking monument for several years. Lately it has been on the ground most of the time. A new wreath regularly appears about the same time each year.

The "unknown grave" was located on the east side of the Trona road between the start of Nine Mile Grade and the entrance to Poison Canyon. It stood in a small clearing in the

greasewood bushes, about 30 feet from the highway.

I first saw it in 1937 or '38. At that time the slab was old and weather-beaten, but the lettering—apparently burned in with a hot iron—was fairly new. At the foot of the plank, with about an inch of the neck showing, was buried an empty quart whiskey bottle. In 1941, some wag buried a pair of weatherworn leather boots with the toes sticking out of the ground just six feet in front of the slab. The effect was ghastly.

I haven't noticed this grave for several years now. Some souvenir hunter probably has grabbed it.

E. S. KIRKLAND

Information Wanted . . .

Redondo Beach, California

Desert:

How about giving us more information about the Jackrabbit Homesteaders? I understand the group in one section is drilling a cooperative well, and others have organized and adopted by-laws, etc.

JOHN R. WARNER

Desert's staff would like to have the addresses of all organized Jackrabbit Homesteader groups. We agree with JRW, their doings will be interesting to many readers. — R.H.

Inyo Mountain Pine . . .

Independence, California

Desert:

As a resident of Owens Valley, I appreciate the letter of William Dye in your May issue, regarding trees in the Inyos. Anyone who knows the Inyos would resent having them called barren.

However, Mr. Dye seems to be confused on the kinds of trees found there. We have white bark pine and foxtail pine as timberline trees on the Sierra side, but I never have seen them in the Inyos. There are many pinyon and juniper trees in upper elevations throughout the range, and good stands of hickory pine are found on the higher peaks and ridges. The latter (*pinus aristata*) may easily be confused with foxtail pine (*pinus balfouriana*), but there is no tree in the Inyos resembling white bark pine.

Mountain mahogany also grows here, often reaching the size of small trees; and I have seen good sized willows in certain locations.

Yes, the Inyos are a desert range, but they are true mountains and do not reveal themselves too readily.

MRS. MARY DE DECKER

Answers, Please . . .

Burbank, California

Desert:

In the May Desert Quiz, the answer to number 6 was omitted. The same misfortune befell question 16 in the June issue.

I only missed one so far in the June test, and hope I guessed right on that San Ildefonso puzzler. Why not publish these two answers in July?

WILLIAM H. REEVES

For Mr. Reeves and other quiz fans frustrated by Desert's oversight, here are the answers: The stream which Major Powell called the Dirty Devil River is now known as Fremont Creek, Utah; True, the Indian craftsmen of San Ildefonso in New Mexico are best known for their pottery making.—R.H.

A Reservation for the Papagos . . .

Following the publication in the February issue of Harold Weight's biographical sketch of Father Bonaventura, some interesting sidelights on the history of the Papago Indians were furnished in a letter written to Harold by Henry J. McQuigg, first superintendent of the Papago reservation. McQuigg wrote in part as follows:

Santa Ana, California

Dear Mr. Weight:

We read with pleased interest your excellent story of Father Bonaventura in the February issue of *Desert*. I have pleasant memories of my work with the good Father in the development of the Papagos.

I was appointed by President Wm. H. Taft as first superintendent of the Papagos in Pima County and the San Xavier reservation in 1910, remaining there until 1916.

Before December 1909 the desert Papagos and the small reservation at San Xavier del Bac were under the superintendent at Sacaton, but Commissioner of Indian Affairs Valentine felt that the time had come to give more autonomy and attention to the Papagos so an Agency with headquarters at San Xavier was founded.

Shortly afterwards good Father Ventura arrived to renew the missionary work of the Franciscans that had been interrupted by politics in old Mexico; and I gave him all the assistance possible in developing his school system and missionary work. At the same time I started the construction of seven government day schools.

When I arrived at San Xavier in January, 1910, Carl Aspaas was engaged in allotting the desert Papagos a quarter section each, which obviously was an unrealistic approach to their

problem of land tenure under desert conditions and their communal method of farming.

When the federal census of these desert Papagos was completed in May, 1910, and it was learned that there were upwards of 4500 Papagos in Pima County instead of the less than 2000 that was previously estimated, the advisability of establishing and creating a separate reservation was justified in my opinion.

The first suggestions made to Washington for the creation of a reservation were made when Inspector Carl Gunderson, later governor of South Dakota, and I made the trip through the desert and recommended by wire in 1910 that the allotment work be stopped immediately and a reservation be created. This recommendation was

opposed and obstructed for a time by politicians in Washington and elsewhere.

It was not until the fallacy of individual Indian allotments was discussed by correspondence and orally with Commissioner Sells during his trip through the Papago country, with the precious and profitable help of good Father Ventura, that these efforts for the creation of a reservation finally attained success.

I opposed the removal of the agency headquarters from San Xavier to Sells as a waste of money, and said personally I would refuse to move there. District farmers could be deputized to settle most problems, and furthermore they could all be connected by telephone to San Xavier.

HENRY J. McQUIGG

Hard Rock Shorty OF DEATH VALLEY



Members of the Coast Camera club were in Death Valley on their annual field trip. They had been out during the early morning exposing their films to the Valley's scenic wonders, and had returned to the Inferno store to loiter around the cold drink stand during the middle of the day.

"Takes shadows to make good pictures" one of the camera enthusiasts explained to the clerk behind the counter. "Pictures are too flat when the sun is directly overhead. We'll be going out again late this afternoon."

Hard Rock Shorty was seated on a counter, corncob pipe in one hand and a fly-swatter in the other.

"Too bad you-all didn't come down here a coupla months ago," he remarked. "If yuh like to take pictures o' shadders we really had a good one fer yuh. Was a perfect likeness o' Ol' Chief Flatfoot, the Paiute Indian."

"Flatfoot wuz in Death Valley when the first white man cum here. No one knew where he cum from, but the day after this here store wuz opened back in 1906 he showed up. He looked hungry and Pisgah Bill bought 'im a box o' crackers. The next day Flatfoot cum back again.

Sat all day on the bench out under the front porch. Boys in the store figgered he hadn't had anything to eat since he finished off that box o' crackers, so they gave him a hunk o' cheese.

"After that Flatfoot wuz a regular visitor. He'd show up jest after sun-up and sit all day on that bench. Generally somebody bought 'im something to eat. And do yuh know, that ol' Indian sat there every day fer 40 years. When the late afternoon sun hit the porch Flatfoot jest stayed there anyway—him an his shadder on the wall.

"One day he didn't show up, an' that afternoon down in the dunes where the Indians had their camp they wuz havin' a burnin' ceremony. Lot o' wailin' an' singin'. One of the Indian boys told us ol' Flatfoot had gone to the Happy Hunting Ground.

"Ol' Flatfoot wuz gone—but not his shadder. That shadder'd been on that wall every afternoon fer 40 years—and I guess it didn't know the ol' chief wuz dead. Yep, that shadder stayed there on the wall fer six months afore it went to the Happy Hunting Ground too."

Here and There - on the Desert

ARIZONA

Project Completion Near . . .

YUMA—Construction of the Well-ton-Mohawk division of the Gila River Project may be completed by 1957, according to the Bureau of Reclamation's current timetable of construction. The project, opened May 1, is expected to bring an additional 10,000 acres under irrigation this year. Almost 17,000 acres of the government-owned land will be divided into 116 farms and offered for sale to qualified veterans over a five-year period beginning later this year. —*Yuma Daily Sun*.

Arizona First in Cotton Yield . . .

CASA GRANDE—Despite the fact that adverse water conditions brought last year's yield down 150 pounds per acre, Arizona farmers still hold the No. 1 position in the country in average yield of lint cotton per acre. Although complete figures are not yet available, Arizona's 1951 yield is expected to reach 750 pounds per acre, compared to the United States average of 268 pounds. —*Casa Grande Dispatch*.

Cattle in Kaibab . . .

GRAND CANYON—The United States Forest Service has decided to give cattle a permanent place on the Kaibab National Game Refuge, which was set aside by President Theodore Roosevelt in 1906 for the famous Kaibab deer herd. The action was taken because cattlemen agreed to reduce livestock use 38 percent through fall calf sales that would remove the annual increase. It is expected the admission of cattle to range lands will necessitate a larger deer hunt this fall. —*Arizona Republic*.

Papagos Best Adjusted . . .

WASHINGTON—The Papagos of Arizona seem to be adjusting best to the demands of a complex white world. This is the opinion of Dr. John M. Roberts of Harvard University, speaker at a three-day meeting of the Institute on American Indian Assimilation. The Papagos are absorbing gradually into the national economic and social structure while still retaining their ancient tribal identity, said Dr. Roberts. —*Arizona Republic*.

Prize Photograph Announcement . . .

Yes, it is hot out here on the desert as this is written, early in June, and the photographers who do their own dark room work have to put ice in their fluids. But they don't mind that—and so Desert Magazine's Picture-of-the-Month contest will be carried on through the summer.

This contest is intended to secure for publication the best of the pictures taken in the desert country each month by both amateur and professional photographers. All Desert readers are invited to enter their best work in this contest.

Entries for the July contest must be in the Desert Magazine office, Palm Desert, California, by July 20, and the winning prints will appear in the September issue. Pictures which arrive too late for one contest are held over for the next month. First prize is \$10; second prize \$5.00. For non-winning pictures accepted for publication \$3.00 each will be paid.

HERE ARE THE RULES

- 1—Prints for monthly contests must be black and white, 5x7 or larger, printed on glossy paper.
- 2—Each photograph submitted should be fully labeled as to subject, time and place. Also technical data: camera, shutter speed, hour of day, etc.
- 3—PRINTS WILL BE RETURNED WHEN RETURN POSTAGE IS ENCLOSED.
- 4—All entries must be in the Desert Magazine office by the 20th of the contest month.
- 5—Contests are open to both amateur and professional photographers. Desert Magazine requires first publication rights only of prize winning pictures.
- 6—Time and place of photograph are immaterial, except that it must be from the desert Southwest.
- 7—Judges will be selected from Desert's editorial staff, and awards will be made immediately after the close of the contest each month.

Address All Entries to Photo Editor

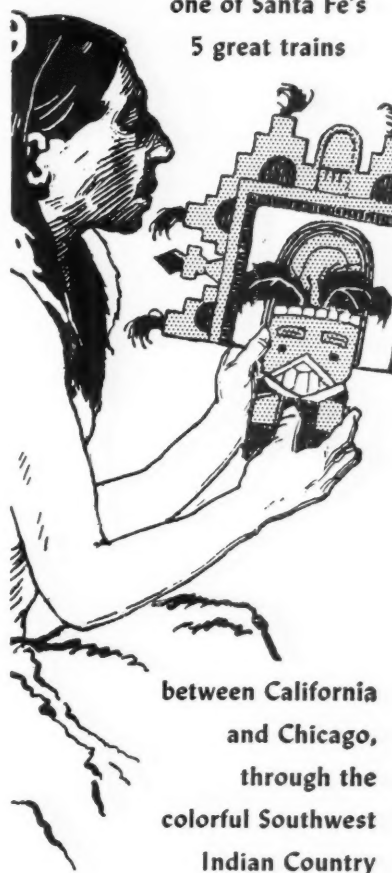
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MISCELLANEOUS

LEATHERCRAFT SUPPLIES: Make your own bags, wallets, belts, etc. Free instructions at store. Mail orders promptly filled. Bill White's, 102 W. State St., Redlands, California.

DESERT TEA. One pound one dollar postpaid. Greasewood Greenhouses. Lenwood, Barstow, California.

PANNING GOLD — Another hobby for Rock Hounds and Desert Roamers. A new booklet, "What the Beginner Needs to Know," 36 pages of instructions; also catalogue of mining books and prospectors' supplies, maps of where to go and blue prints of hand machines you can build. Mailed postpaid 25c, coin or stamps. Old Prospector, Box 729, Desk 5, Lodi, Calif.

LADY GODIVA "The World's Finest Beautifier." For women who wish to become beautiful, for women who wish to remain beautiful. An outstanding desert cream. For information, write or call Lola Barnes, 963 N. Oakland, Pasadena 6, Calif., or phone SYcamore 4-2378.

NATIVE HUT, Novelty Lamp. Hut designed parchment shade. When lighted, shows native dancer and drummer silhouette. Raft type base, 5"x5"x2". Lamp 11" high. \$5.95 postpaid. Television style, 12", \$7.95 postpaid. Send 10c in coin for snapshot, credited on order. Lynn Lamp Shop, Route 1, Box 128A, Yuma, Arizona.

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TO TRADE for desert property, a small business preferred, on main highway, with good water supply, of equal value to my property in Port Orford, Oregon. Have 5 room house center of town and situated one block from my crab and sea food market with beer license on property with 96 foot frontage on Highway 101 in seaport town. Doing a good business. Home and furniture valued at \$6000 and going business and business property valued at \$7000. Will trade one or both. Further details, write V. H. Kohl, Box 773, Port Orford, Oregon.

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Test Indian Welfare Laws . . .

PHOENIX—Are Indians living on reservations entitled to the same treatment as anyone else in the matter of public assistance? This long-disputed question will be decided by the federal courts when they deliver a ruling on a petition the State of Arizona has filed for declaratory judgment. The stage was set for the litigation when Oscar Ewing, federal security administrator, ruled a new Arizona law out of conformity with federal regulations. The act created a new category of aid to the totally and permanently disabled and specifically barred reservation Indians from its benefits. Its passage and Ewing's action both were part of a plan to clear up the whole question of Indian welfare responsibility and at the same time not jeopardize federal matching funds for other phases of the state's welfare program.—*Arizona Republic*.

• • •

To Study River Border . . .

PHOENIX — The Colorado River has created a number of boundary disputes by its meandering since the Arizona state line was declared to be the center of the river. Because California is surveying the lands along its side of the river, and since the state legislature has authorized a survey on the Arizona side, Governor Howard Pyle announced he will reactivate the Arizona Boundary Commission. The three-member group was first appointed in 1941 to meet with a group from California to discuss boundary problems.—*Arizona Republic*.

• • •

Apaches Adopt Game Plan . . .

WHITERIVER—A comprehensive game and fish management and recreational program has been adopted by the Fort Apache Tribal Council. The council has budgeted \$22,600 of accumulated fishing-permit fees for the first year of the program and authorized increases in the fishing permits effective July 1 to finance future developments. Improvement of campsites, picnic grounds, trails, fish shelters and game facilities are planned.—*Arizona Republic*.

• • •

Norman Nevills Memorial . . .

MARBLE CANYON — Norman Nevills, veteran Colorado Riverman, and his wife Doris were killed in 1949 when their airplane crashed during a take-off from the desert runway near their home at Mexican Hat, Utah. Now, almost three years later, a Norman Nevills Memorial Plaque will be dedicated July 11 at Navajo Bridge in Marble Canyon. Many of Nevills' friends, who made the Colorado trip with him, will gather for the ceremony.

CALIFORNIA

Search for Greasewood . . .

PALM DESERT—The possibility that leaves of the creosote bush—commonly known as greasewood—have commercial potentiality is being investigated by a large spice processing company. Creosote leaves can be converted by a lengthy process of extraction and re-extraction into a fine powder that prevents or retards rancidity in fats, oils and fatty foods. H. S. Warren, chemical engineer and production supervisor for the William J. Strange Company, makers of the crystalline end-product, has been exploring the Coachella Valley for thick concentrations of greasewood. The chemist reassured nature lovers that creosote bushes will not be destroyed by the leaf-picking. "It is as beneficial as tip-pruning," he said.—*Palm Desert Progress*.

Would Abandon Historic Road . . .

MECCA—Declaring that the present bridge over the All-American canal east of here is inadequate, the California State Highway Division has asked that the historic road through Box Canyon be abandoned unless the Coachella County Water District will install a new bridge, estimated to cost \$260,000. The Box Canyon road was in use for nearly 50 years before the Indio-Blythe cut-off was completed a few years ago. It goes through one of the desert's most scenic canyons, and residents of Coachella Valley are preparing protests against its abandonment.—*The Date Palm*.

Franciscans to Leave . . .

BANNING—Franciscan monks, in California since 1770, are about to leave four Southern California counties—Riverside, San Bernardino, San Diego and Imperial—after 182 years of continuous service to Roman Catholic parishioners throughout California. The Franciscans first were assigned to the Southwest after Spanish King Charles III banished the Jesuits in 1767. On exploratory expeditions from Mexico, Franciscan Father Junipero Serra established locations of the California missions.—*Banning Record*.

Plan "Shady" Myrick Shrine . . .

RANDBURG—In memory of Francis Marion "Shady" Myrick, Mojave Desert's most famous gemstone prospector, the Desert Lions Club of Johannesburg and a group of Shady's desert friends erected a monument of Mojave Desert gemrock over his grave. The monument and plaque were dedicated in Memorial Day ceremonies.—*Randsburg Times-Herald*.



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May Develop Mesa Land . . .

BLYTHE—After nearly 40 years of planning, progress finally is being made toward the development of irrigation facilities on approximately 16,000 acres on the first Palo Verde mesa. Negotiations now are directed toward including the mesa in the Palo Verde irrigation district.—*Palo Verde Valley Times*.

Canal Transfer Official . . .

EL CENTRO—At one minute after midnight on May 1, U. S. Reclamation Bureau officials turned over to representatives of Imperial Irrigation District the \$25,000,000, 80-

mile-long All-American Canal. The event, which took place without ceremony, was staged in the main control house of Imperial Dam, 18 miles upstream from Yuma where the diversion works and desilting basins of the canal are located.—*Los Angeles Times*.

To Revive Mecca Pageant . . .

MECCA—The Mecca Easter Pageant, given annually since World War II in Box Canyon but suspended this year, will be produced again in 1953, members of the Mecca Civic Council have decided. Financial difficulties and production worries caused abandonment of the 1952 presentation. A campaign will be conducted in advance to underwrite next year's show.—*Riverside Enterprise*.

Recommend Canyon Sites . . .

INDIO—Painted, Box and Hidden Springs canyons and all palm oases on the northeast rim of Coachella Valley have been recommended by Superintendent William Kenyon of the state parks division for inclusion in the California park system. Kenyon envisioned a park system that would include all of the palm oases along the northern edge of the desert; he said he believed the state would have little trouble acquiring the lands.—*Desert Sun*.

NEVADA

Pioneer Paper Returns . . .

VIRGINIA CITY—After an absence of 36 years, the *Territorial Enterprise*, famed newspaper of pioneer days, has reappeared on the streets of Virginia City, a tumbledown mining town astride the once fabulous Comstock Lode. The publication—literary birthplace of Mark Twain, who served on its staff as reporter during the mining boom days—was resurrected

by Lucius Beebe and Charles Clegg, western historians and authors. Although the population of Virginia City has dropped from 20,000 during its heyday to a mere 400 today, the new publishers expect a profitable return by combining the *Enterprise* with the *Virginia City News*.—*Pioche Record*.

Plan Cave Exploration . . .

WHITE PINE—Exploration of the caves of east central Nevada is planned late in July by Stanford Grotto of the National Speleological Society. Raymond de Saussure of San Francisco reports the Stanford University group from Palo Alto, California, hopes to publish the results of its study both in the club bulletin and in a special volume devoted entirely to material obtained on the trip.—*Ely Record*.

Famous Ghost Town Sold . . .

LIDA—The ghost town of Lida, Esmerelda county, Nevada, passed into private ownership when Harold V. Smith, prominent cattleman of the Hawthorne area, purchased the townsite during a public auction held by the Bureau of Land Management. Lida first came into prominence even before the days of Tonopah and Goldfield and was one of the indirect reasons for the discovery of the two big camps in Nye and Esmerelda counties. Prospectors fanned out from Lida to roam the hills, and shortly after, in the dawn of the 20th century, Jim Butler and his mule brought in the bonanza at Tonopah. Goldfield was discovered four years later. — *Las Vegas Review-Journal*.

20-Mule Team to Las Vegas . . .

LAS VEGAS — A 20-mule team and wagons arrived for the Helldorado celebration in Las Vegas after an eight-day drive across the desert from Death Valley, California. Before leaving Furnace Creek Lodge in Death Valley, the wagons were loaded with borax, just as the original wagons were loaded in the early days. Skinner was Bruce Morgan, operator of the stables at Furnace Creek for the Pacific Coast Borax Company, sponsor of the team.—*Inyo Independent*.

Reveille Approaches 90 . . .

AUSTIN—The oldest paper in Nevada and one of the oldest in the United States, the *Reese River Reveille* entered its 90th year of publication in May. Born in the days when the West was still comparatively little known, the *Reveille* reaches back in an unbroken line to the territorial days before Nevada was admitted as a state and when Austin was a mining boom town.—*Reese River Reveille*.

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GAZINE

NEW MEXICO

Man-Made Rain Travels . . .

ALBUQUERQUE — Reporting on a 21-month rainmaking experiment in New Mexico, Dr. Irving Langmuir, Nobel prize winning scientist, announced he had created a nationwide weekly rainfall pattern by seeding clouds with silver iodide. Dr. Langmuir and a group of scientists seeded the atmosphere above central New Mexico for a period of 21 months. Seeding days were shifted periodically, iodide amounts were changed, and careful records were kept. The scientists found they could control the nation's weather pattern. When they seeded New Mexico air on Monday, Tuesday and Wednesday, it rained in the East on Friday, Saturday and Sunday—the lapse being the time it took for the seeded air to move across the country. "Each and every week there was a phenomenal rise and fall," said Dr. Langmuir.

A check was started of weather bureau reports for as long as they have existed. Dr. Langmuir said in all the recorded history of weather, no similar pattern could be found.—*Arizona Republic*.

• • •

Bandelier Sets Record . . .

LOS ALAMOS — Bandelier National Monument has set a new single day attendance record, attracting 1132 visitors May 11. "An especially nice day for picnicking, horseback riding and hiking," was the only explanation Superintendent Fred Binnewies could give for the record crowd and earlier-than-usual heavy park use. Previous record for the monument since its founding in 1916 was May 27, 1951, when 1129 people were counted. — *New Mexican*.

• • •

Not Fancy Schools—Just Schools . . .

WASHINGTON—"We will do anything to get teachers, school books and classrooms for our 28,000 school children," said Sam Akeah, chairman of the Navajo Tribal Council, in endorsement of a less costly program for Navajo education. Several witnesses attacked the Indian Bureau's present school construction program before the Senate appropriations committee. They claimed the Indian Bureau is building "fancy show-place" schools for the Navajos and said four times the number of students could be accommodated for the same money if barracks-type buildings were substituted.—*Arizona Republic*.

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TAOS — Oscar E. Berninghaus, Taos artist famed for his interpretation of Indian life and the Southwest, died April 27 in Taos of a heart attack. He was 77 years old.—*El Crepusculo*.



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Teaching Standards Too High . . .

WASHINGTON—In the reservation areas of New Mexico and Arizona there are 15,000 Navajo children now without schooling. One of the reasons an education is denied them, maintains Dr. M. W. Royce, a Georgetown University professor, is that the Indian Bureau's standards for teachers are too high. "One must almost pass a regular college board examination to get a teaching job on the reservation," he said. Dr. Royce spent three months on the Navajo reservation last

summer, studying conditions for the state of New Mexico.—*Arizona Republic*.

State Suggests Water Split . . .

SANTA FE—The state has suggested that 575,000 acre-feet of San Juan River water be earmarked for two irrigation projects in the San Juan Basin of northwest New Mexico. John R. Erickson, interstate streams engineer, said this should be enough water to irrigate 130,000 acres of land and suggested that amount be reserved for the Navajo (Shiprock) and South San Juan projects. New Mexico is allotted 838,000 acre-feet of water under the Upper Colorado River Basin Compact, and this must come from the San Juan.—*New Mexican*.

100 Years of Service . . .

TAOS—Centennial ceremonies were held in May to commemorate the 100th year of service in New Mexico by the Sisters of Loretto. The Sisters were brought to New Mexico by Archbishop Lamy in 1851 to establish a school for girls in Santa Fe. In 1863 the first branch of the Santa Fe school was established in Taos and named St. Joseph's. A modern school building was erected last year.—*El Crepusculo*.

UTAH

May Import 500 Sheepmen . . .

VERNAL—Wool producers in the Western United States are conducting an intensive area by area survey of labor needs with the intention of importing 500 skilled sheepherders from Europe. Public Law 307 was passed recently by Congress as a special immigration act to relieve the labor shortage in the industry. Basque herders from the Pyrenees mountain region of Spain and France, Scotch sheepmen and herders from other European sheep growing areas have been requested by ranchers interviewed during the survey. Congress, in passing the special immigration act, noted that wool production in the United States has declined nearly 50 percent during the past 10 years and blamed the decreasing supply of skilled herders for the lowered production.—*Vernal Express*.

Tourist Figures Given . . .

SALT LAKE CITY — California leads all states in numbers of tourists who visit Utah, indicates the National Parks Service 1951 report on cars and passengers registering at Bryce and Zion canyon stations. Zion attracted 331,676 visitors, more than any other national park or monument in the state. Temple Square in Salt Lake City was the only single attraction to register more than a million visitors.—*Salt Lake Tribune*.

Reservoir Loan Okayed . . .

PANGUITCH — F.H.A. approval has been stamped upon \$100,000 loan to the New Escalante Irrigation Company for construction of a \$111,000 dam across Wide Hollow, three miles northwest of Escalante. The proposed dam will be 42 feet high and 1600 feet long and will have a storage capacity of 2300 acre-feet. When completed, the dam is expected to double available irrigation water and to bring an additional 2000 acres of valley lands under cultivation.—*Garfield County News*.

Traffic School for Indians . . .

BLANDING — To teach Indians the rules of driving and traffic, an educational program is being conducted in San Juan county. Two-hour classes are held once a week for Utes in Blanding and for Navajos at Bluff. The tests are given orally, and interpreters are present to insure the students' understanding of problems. Many of the Utes are buying cars with money from tribal oil royalties.—*San Juan Record*.

Drouth, Floods Plague Farmers . . .

SALT LAKE CITY—Like the Ancient Mariner who was surrounded by water but had not a drop to drink, some Utah farmers have been harassed by too much and too little water at the same time. With thousands of acres — mostly low pasture lands — inundated by record spring floods, nearby and sometimes adjoining acres were damaged by an unusual spring drouth. The drouth arose from two factors: washed out canals which prevented irrigation, and lack of rain to supply top soil moisture for seed germination.—*Salt Lake Tribune*.

ANSWERS TO DESERT QUIZ

Questions are on page 26

- 1—Address a few uncomplimentary remarks at the insect and forget it.
- 2—Rhyolite is in Nevada.
- 3—San Jacinto Mountains.
- 4—Arizona.
- 5—Ocotillo.
- 6—Creosote bush.
- 7—A species of date grown in the California desert.
- 8—Utah.
- 9—Lead.
- 10—Exploration of the Lower Colorado River.
- 11—A prehistoric tribe of Indians.
- 12—White Mountains of Arizona.
- 13—Sticks and twigs.
- 14—Tombstone.
- 15—Bird.
- 16—Camino del Diablo.
- 17—Roast it in a pit.
- 18—Navajos.
- 19—Gila River.
- 20—Albert M. Johnson.

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THE *Desert* MAGAZINE CLOSE-UPS

A Dartmouth graduate who spent ten years in the "canyons" of Wall Street, Edgar Ellinger, Jr., now operates a small handicraft and Indian trading post in Sedona, Arizona, at the entrance to Oak Creek Canyon. "I have traveled much and have visited almost every nook and cranny in the world," writes Ellinger, "but never have I found a place with more to offer than the American Southwest in general and Arizona in particular."

Bachelor Ellinger lives alone at his Saddle Rock shop. He loves horses, and riding, music and writing are his favorite hobbies. In the future, he hopes to spend more time at his typewriter, producing stories like the one on Hoke Denetsosie which appears in this issue.

Drawing and painting are hobbies with Charles Keetsie Shirley, Navajo artist who illustrated John Mitchell's "Lost Mine with the Iron Door" for this issue of *Desert Magazine*. They have been profitable hobbies, and many of this talented Indian artist's water color paintings have been sold throughout the Southwest.

Keetsie is an engineering draftsman with the Indian Service Irrigation Division in Phoenix, Arizona. He and his family live in the small town of Goodyear, 18 miles west of Phoenix.

Keetsie spends much of his free time painting, drawing and clay modeling with his three children. Two still are in elementary school, and the oldest boy, 16, attends Litchfield High School. "The baby of the family, my nine-year-old daughter, takes great delight in drawing with her left hand," reports her father. With three active youngsters in the family, Mrs. Shirley has plenty to do keeping house.

The Shirleys have lived for the past 10 years in communities composed of two or more races of people, generally with a white majority. They do not miss the Indian reservation, and all of them have become adjusted to the cultural patterns and accustomed to the conveniences and comforts of modern living.

Eighty-five-year-old Charles Battye, pioneer resident of Needles, California, is a true desert old-timer.

Battye, author of this month's Life-on-the-Desert contest story, was born December 15, 1867, in the West Riding of Yorkshire, England. He came to

America when just a lad and worked his way west to Needles, where he obtained employment with the Atlantic and Pacific Railroad.

His job with the A & P, now the Santa Fe, and occasional prospecting trips such as the one described in his story of Indian gratitude and gold, kept him in Needles for a number of years. But the cry of gold soon called Battye and his prospecting side-kick, William Hutt, to Forty-Mile Creek in Alaska. They arrived there in 1889, too early for the big Klondike rush.

After Alaska, Battye returned to Needles, then journeyed on to Arizona mining camps. He was married in Arizona in 1897 and brought his bride back to Needles to live. The Battyes now make their home in San Bernardino, California, where they moved in 1924.

Old-timer Battye has many memories of the desert and early railroad-ing in the West. His true tales have appeared frequently in the Needles and Barstow newspapers.

Honoring Mary Beal of Daggett, California, desert botanist and nature lover and frequent contributor to *Desert Magazine*, a Nature Trail was dedicated in June at Mitchell's Caverns, 23 miles northwest of Essex, California. Miss Beal's story, "They Like a Rocky Terrain," appears in this issue.

The caverns, situated at an elevation of more than 4000 feet on the east face of the Providence Mountains, present a wide variety of desert flora in an attractive and easily accessible setting.

A plaque and cairn, dedicating the

trail to the desert naturalist, was unveiled by Jack Mitchell at ceremonies June 15.



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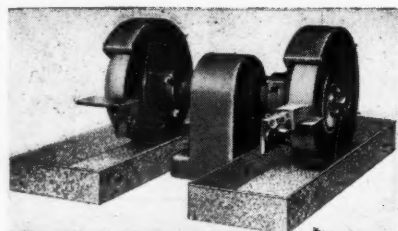


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Amateur Gem Cutter

By LELANDE QUICK, Editor of The Lapidary Journal

In a new application of the old adage that "it's an ill wind that blows nobody good," it will come as news to many that the rockhound hobby in California is being helped by the gambling interests. Each year there are new county fairs being established and the old fairs get bigger and better. They get bigger, better and more numerous because the state has a lot of money to hand over to the counties for fairs and that money comes from the state's share of the race track proceeds, amounting to millions each year.

Much of the state money is given as premiums for displays of things made by the local citizenry. These prizes range all the way from a first prize of \$2.00 for the best fudge to \$55.00 for the best faceted stones (in San Diego County). That there are not more mineral and gem displays at county fairs is probably the fault of the societies and individuals within the county.

The Los Angeles County fair is reported to be the largest in America and its attendance tops any mark set by any state fair. The investment in buildings and equipment runs into millions. We understand that a separate building is being planned for gem and mineral exhibits alone. But the best organized gem and mineral section of any fair is the one sponsored by the county of San Diego. This is one of the neatest and most educational fairs we have ever attended. Their premium list this year for gems and minerals is \$1200. Much of this is offered for displays of San Diego county minerals and gems only and all of it is offered to county residents solely—as it should be.

Several years ago the San Diego Mineral and Gem Society set the pattern for the display and brought much of the equipment from the famous Kipp shop to show the public how it was done. When the San Diego Lapidary Society was organized they too greatly helped to develop the lapidary display to its present high standard so that now the San Diego County Fair (opening this year on June 27 and extending through July 6 at Del Mar) has the best working lapidary exhibit of any show in the country; better by far than any we have seen at any society or Federation affair. The result is that probably the citizenry of no other county is as well informed about what rockhounding is all about as are the citizens of San Diego County.

It seems to us then that any little society anywhere in California, usually without funds and usually bankrupted by even a little show, should immediately approach their own county authorities and see that they are allowed to have their annual show in a place provided with free rent and display cases and adequate protection, where the greatest number of people can come to see what they are doing. As the gravy train rolls by all the California rockhounds ought to swing aboard.

There are so many gem and mineral shows now that hardly a week end passes that one is not scheduled somewhere in California except in the deep summer and

the deep winter. These are usually financed by a hard working group, raising money by raffles when they could finance it much better with legal race track funds.

We often wonder why societies have to struggle along financially at all. The chief reason is that almost all of them charge the ridiculous sum of \$2.00 a year for dues just because the first societies, born in the depression, charged that much. No society can offer much over the period of a whole year in programs and coffee for a little sum like \$2.00. Back in the '30s coffee was a quarter a pound and now it's up to nearly a dollar. Dues in societies should be at least \$10.00 a year and then the treasury would have ample funds to offer speakers, enough money for gasoline, dinner and shelter when they travel long miles with a message, instead of an unsubstantial "thank you for coming tonight."

To come back to the fairs—there has been a tremendous awakening of interest among the citizens of the counties where their fairs feature mineral and gem exhibits of man's oldest art and America's fastest growing hobby. And it is good to know that much of the expense in fostering this idea comes from the money bet at the race track. So next time you bet \$10 to win on Hobby the Second and he doesn't even show, gather a little comfort from the thought that hobby horses and hobby crafts are nearer than you think.

A cursory examination of the premium lists of several fairs indicates that the present set-up has many weaknesses. Without having any individual in mind at all it becomes apparent that the man with the biggest pocketbook in the county can easily assemble the best mineral exhibit and cop the first cash prize every year by showing the same bunch of rocks, while the lapidary has to earn his money by his skill. He too can show the same prize-winning faceted stones every year until he comes to have a monopoly on first prize money because his collection gets bigger and bigger through the years. The San Diego Fair has given thought to this problem by having a special class for exhibitors who have never before had an exhibit of their work at any previous fair. Another feature we like about the San Diego deal is that any San Diego County citizen may exhibit his collection without entering any class or entering in competition with anyone.

We are not familiar with the fair program in other states but rockhounds everywhere should find out just what provision is made for the display of their collections to the public at the fairs in their particular state. In Arizona there is a fine provision for the youngsters. A highly mineralized state has made its students gem and mineral conscious by offering high schools prizes for the best collections of Arizona materials. The result of this is that the present generation of Arizona young people is probably the best informed group of young people about mineral resources of any state group in the country for every high school every year enters a mineral exhibit.

Gems and Minerals

BULLETIN OFFERS TIPS FOR FLUORESCENT DISPLAY

"Experimentation has shown that the 'tubelight' black lights made to illuminate colored sign boards will cause rocks which react to a long wave cold light to fluoresce," reports the *Rear Trunk*, monthly bulletin of Nebraska Mineral and Gem Club. "Most of the calcites and fluorites will give good results."

The Nebraska club's editors suggest that mineral collectors anxious to have fluorescent displays obtain one of these lights, then test its effect on various rocks to select specimens for exhibit.

Among minerals which react to long wave light are: calcite from New Jersey, California, Texas, Arizona and Wyoming; fluorite from California and Ohio; colemanite from Death Valley; argenite from Pennsylvania; adamite from Mexico; autunite from New Hampshire; wernerite from Canada; semi-opal from Nevada; sweetwater agate from Wyoming; petrified wood from Nebraska, South Dakota, Wyoming and Utah.

"Rocks of any variety from the Black Hills and eastern Wyoming region that have a white coating on them will react favorably with a brown-to-orange color," the bulletin concludes.

YOUNGEST FEDERATION PLANS CONVENTION, SHOW

Eastern Federation of Mineralogical and Lapidary Societies, youngest of the regional federations, will hold its second annual convention and gem and mineral show October 9 to 11 at the Essex House in Newark, New Jersey. Co-hosts will be the Newark Mineralogical Society, the Newark Lapidary Society and the North Jersey Mineralogical Society.

Detailing the gem cutting process from initial sawing to faceting and final polishing, Scott Cook addressed a Los Angeles Mineralogical Society audience on "Diamond and Gem Cutting." Differences between popular cuts—round, emerald, baguette and marquise—were explained.

JULY 26, 27 DATES FOR LONG BEACH MINERAL SHOW

Long Beach Mineral and Gem Society will hold its first show in two years July 26 and 27 at Sciots Hall, Sixth and Alamitos, Long Beach, California. Plans were made at the May meeting, after a program discussion of telluride minerals.

GEMS THE WORLD OVER SPECIAL SHOW FEATURE

Four famous collections of gems, showing "Gems the World Over," will be on exhibit at Whittier Gem and Mineral Society's Rockhound Show September 6 to 7 at Smith Memorial Hall, College and Pickering Avenues, Whittier, California. Display sections will be devoted to the elements, lapidary arts, junior collections and dealers' equipment.

MIDWEST FEDERATION READY FOR JULY SHOW

Minnesota Mineral Club and Minnesota Geological Society are completing arrangements for the 1952 convention and exhibition of the Midwest Federation of Mineralogical Societies. The show will be held July 1 to 3 at Macalester College, St. Paul, Minnesota.

Mineral Minutes, edited by Fern and Olin Brown, describes a project carried on by the Colorado Mineral Society in conjunction with the Denver Y.W.C.A. At the youth organization's One World Fiesta, the mineral society arranged a display of 20 minerals selected by the society as being most representative of the state of Colorado. Another collection presented specimens from noted mineral locations the world over.

Arizona travel slides, picturing Tombstone, Salt River Canyon, the Grand Canyon, Jerome, Cottonwood, Oak Creek Canyon, Sedona, Painted Desert and Montezuma Well, were projected by Photographer Joe Noggle for the Yavapai Gem and Mineral Society, Prescott, Arizona. Noggle also showed close-ups of various cactus blossoms.

A geological or mineralogical book will be reviewed at each meeting of Dona Ana County, New Mexico, Rockhounds, Mrs. Sara Swartz, chairman of the library committee, announced in May. Bulletins of other clubs will be placed in the club library and will be available to members at any time, said Mrs. Swartz.

Senior rockhounds of Coachella Valley Mineral Society, California, traveled to Arizona to search for green petrified wood in the Dome Plain area. Excellent specimens were found by Dorothy Faulhaber and Jane Walker.

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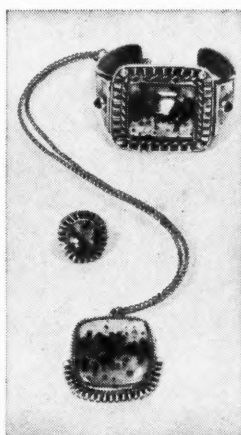
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ROCKHOUNDS, ARCHEOLOGISTS and collectors of Indian relics are discovering that Southern Utah is a rewarding section to visit. Write for free folder. Ranch Lodge Motel, Kanab, Utah.

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AMONG THE ROCK HUNTERS

Last meeting of the season for Colorado Mineral Society was a banquet and "fun night." Movies and slides of society field trips were shown, and members were invited to display rock cutting gadgets and lapidary tricks. Highlight of the evening's entertainment was a hat parade, in which members modeled homemade millinery trimmed with favorite rock specimens.

Gem Collector's Club of Seattle met recently to hear Speaker Sheldon L. Glover tell about the mineral industry of Washington.

Indian axes, arrowheads, hammers, pottery and other artifacts from his private collection were shown by Herbert R. Rollins to members of the Yavapai County Archeological Society, Prescott, Arizona. Rollins first became interested in Indian cultures while a boy in Buffalo, New York.

Clear Creek, 129 miles from Palo Alto, California, was the destination of a field trip group from the Gem and Mineral Society of San Mateo County. The route was mapped by Field Trip Director Lloyd Underwood.

George Green, home from a three-month trip to Mexico, told Tacoma Agate Club members of his vacation experience. He displayed Mexican and Arizona crystals and several fluorescent rocks found on collecting side trips.

Larry Cassingham spoke on "Radioactive Ores" when he appeared before San Fernando Valley Mineral and Gem Society, North Hollywood, California. The stones of the month, synthetic ruby and sapphire, were discussed by Samuel Sklarew.

E. V. Van Amringe, head of the department of physical science at Pasadena City College, Pasadena, California, annually leads a group of his geology students on a week-long field trip. This year the party visited Southern California and parts of Arizona. Van Amringe told about the trek at a recent meeting of the Mineralogical Society of Southern California. On display were various specimens collected enroute.

Harold H. Hagen was installed president of Santa Monica Gemological Society at the twelfth annual dinner meeting in May. Speaker for the evening's program was Dr. William Easton of the University of Southern California. Dr. Easton's subject was "A Geologist Looks at Death Valley."

First field trip of the new season for Minnesota Mineral Club was scheduled in May to the Louise Mine at Crosby-Ironton. Members hoped to pick up a supply of vein Binghamite and some cutting agate.

Simple tests to identify ores and minerals were described by Dr. H. A. Quinn of Texas Western College when he returned to the El Paso Mineral and Gem Society as guest speaker.

John L. Flocken explained different methods of making costume jewelry when he appeared as guest speaker at a gem and lapidary division meeting of San Diego Mineral and Gem Society. Flocken discussed both stones and mountings.

METHODS OF ARCHEOLOGY DESCRIBED FOR AMATEURS

Archeological methods were outlined by David Wenner when he spoke at an archeological section meeting of the Earth Science Club of Northern Illinois. "First, one should describe the location of his site as definitely as possible — with maps, landmarks, natural features and a rough estimate of size and distance relationships," said Wenner. "Material found should be cleaned, marked, described and listed. Potsherds should be washed with brush and water, but they should not be allowed to dry in the sun. India ink, soluble in alcohol, is the best medium for numbering specimens."

Patrick's Point and Big Lagoon, California, were explored by Humboldt Gem and Mineral Society on a recent rockhunting expedition.

Orin J. Bell, vice-president of East Bay Mineral Society and former president of the California Federation of Mineralogical Societies, discussed the "Rise and Fall of the Sierras" for Northern California Mineral Society members at a meeting in San Francisco.

At the annual May banquet of Washoe Gem and Mineral Society, plans were made for a field trip to the Pyramid Lake Indian reservation. Members would hunt geodes, vesuvianite and calcite.

San Diego Lapidary society traveled to Laguna Dam, north of Yuma, Arizona, for geode hunting on a two-day field excursion. Looking for cutting material, members were disappointed until someone remembered the location was known not for cutting quality but for fluorescence. On later side-trips, the San Diegans found petrified Ironwood, lead specimens, agates, small geodes and fluorite crystals.

At a recent meeting of the Gem Cutters Guild of Los Angeles, C. A. Terry gave an illustrated lecture on "Inclusions in Crystals of Gem Materials."

Participants in a Chicago Rocks and Minerals Society field excursion to the Lake Geneva region of Wisconsin learned fundamentals of geology from Dr. William E. Powers, professor of geology at Northwestern University. Lake Geneva is an old valley scoured deeper by the last glacial advance and blocked at each end with glacial drift. It presents an excellent textbook for the study of the effect of glaciers on the earth's development.

Members of Compton Gem and Mineral Club hoped to find jasper and jasp-agate on a field trip to Lavic, California. Al Cook was leader.

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A new charter recently was granted by the State of California to Orange Coast Mineral and Lapidary Society, organized five years ago in Costa Mesa, California. Officers of the group are Ralph Best of Costa Mesa, president; Rev. Andrews of Anaheim, vice-president; Floyd Owings of Orange, treasurer, and Jennie Silkwood of Orange, secretary. Directors are Anna Holditch and Roy Silkwood of Orange, Harold St. John and Carl Cowles of Santa Ana, Anne Ford and Don Woods of Costa Mesa, Perry Huddle of Huntington Beach and Carl Englund of Fullerton.

Bruce Kramer demonstrated his method of polishing cabochons at a meeting of the Gem Cutters Guild, Los Angeles. Kramer prefers slightly worn No. 220 and No. 320 sandpaper for grinding, and cerium oxide as polishing agent on a leather or felt buff.

Forty-two members already are registered in the newly-organized Modoc Gem and Mineral Society of Alturas, California. President A. R. Close reports the young club is sponsoring weekly adult classes in mineral studies at Modoc High School.

At a recent meeting, after telling members of the Western Nebraska Mineral Society about quartz family minerals, Gordon Brooks demonstrated use of his field mineral light.

L. H. Murrell entertained the San Diego Mineral and Gem Society with remarks and colored slide pictures of Death Valley, the Calico Mountains and Arizona's Castle Dome. Murrell has taken several rock trips into these areas.

After election returns were in, Captain Harry A. Reed was congratulated as new President of Santa Cruz Mineral and Gem Society. Jack Moore is vice-president; Dora Anderson, secretary, and Hugh Baird, treasurer.

Members of Sacramento Mineral Society hunted for quartz Xls on a field trip to Placerville, California.

Caravan Chairman Ray Erickson of Everett Rock and Gem Club, Washington, planned a May field trip to the Columbia River near Vantage. Members would hunt for arrowheads and other Indian artifacts.

Natural color slides of mineral specimens were shown by Scott Lewis at a general meeting of Whittier Gem and Mineral Society, Whittier, California.

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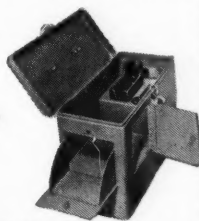
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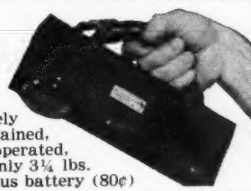
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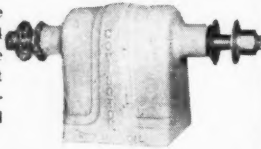
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Unusual specimens of fluorescent barite were found recently near Glenwood Springs, Colorado. Under long wave lamps, the specimens fluoresce a rich canary yellow somewhat similar to the familiar wernerite.

Bev Morant of Monrovia, California demonstrated to members of Pasadena Lapidary Society how they might save money in their hobby. His topic was, "Economy in the Lapidary Shop."

Mrs. Otto Sahn told of her father's mineral and lapidary hobbies at a meeting of Nebraska Mineral and Gem Club. She showed choice specimens from his collection.

A 24-car field trip caravan bore members of Kern County Mineral Society to an agate location near California's Sheep Springs. The rockhounds came home with quantities of gem-quality cutting material.

Colored slides illustrated Dr. Owen D. Dwight's talk before members of Pasadena Lapidary Society, Pasadena, California. Dr. Dwight, a dentist, spoke on gold and silver jewelry casting.

Thirty-nine members and guests of Hollywood Lapidary Society enjoyed a field excursion to Last Chance Canyon, California. Petrified wood was found in abundance, and a few lucky searchers came home with jasper as well.

In the vast, 200-foot high Cathedral Room of Marvel Cave in Illinois, stands a 53-foot stalagmite named the Liberty Bell. This and other features of the cave were shown to Chicago Rocks and Minerals Society members by Owner Hugo Herschend and his son, Jack, who had taken colored slides of cave attractions.

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SHADOW MOUNTAIN SOCIETY ELECTS DON BUTTERWORTH

Don Butterworth was elected president of Shadow Mountain Gem and Mineral Society at a recent meeting in Palm Desert, California. Also named to the new board are Byron Phillips, vice-president; Mrs. Elizabeth Hollenbeck, recording secretary; Mrs. Sam Cowling, corresponding secretary, and Mrs. Vera Lockwood, treasurer. Board advisors include Randall Henderson and Leland Quick, and directors are Margaret Ward, Omar Kerschner, Joseph Hughes, Ray Purvis, Jack Lizer, Esther Edison, C. Grier Darlington, Mary Ann Waher and James Carpenter.

Seven cars carried collectors from Delvers Gem and Mineral Society, Downey, California, to the Kramer Hills for a day of rockhunting. Petrified palm and some colorful jasper were found in gravel beds of flat washes.

At a recent election, the Mineralogical Society of Arizona chose the following slate of new officers: Floyd R. Getsinger, president; Charles E. Vanhook, vice-president; Carroll Mills, Jackson L. Clark, E. R. Blakeley and C. Fred Burr, governors. A secretary-treasurer will be appointed by the board.

Although still in their first year, Pueblo Rockhounds already have outgrown their former meeting place and now gather in the Pueblo Woman's Clubhouse. Membership has reached 46, and a junior department has been established.

Are things a little dull and static around your society lately? Get your program chairman to get a local teacher of geology to present a talk to you about the basic rocks and you'll have an interesting and useful evening I am sure. A representative display of common rocks could be arranged to illustrate points.

Installation of officers was scheduled to take place at the June dinner meeting of East Bay Mineral Society, Oakland, California. New president is Ivan W. Root. On his executive board are Ernest M. Stone, vice-president; Mrs. Cassie Mae James, secretary; Mrs. Sidney H. Smyth, treasurer, and R. O. Wiechmann, director. President Root announces the first meeting of the new club year will be held September 4. He succeeds retiring executive Rex Hawkins.

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AZINE

SEPTEMBER DATE SET FOR SAN DIEGO SHOW

Fifteenth Annual Mineral and Gem Show of San Diego Mineral and Gem Society will be held September 27 and 28 at the society's permanent home in Spanish Village, Balboa Park, San Diego, California, announced Paul Brown, president, at a recent meeting. One of the features of the exhibition will be working demonstrations by members of the club's lapidary classes.

The San Diego group had a full schedule of activities for June. Colored movies of the harbor city were to be shown at the general meeting; Joe Stetson would talk about stone cutting and mountings to the gem and lapidary division; and lead was up for study by the mineral resources division. The mineralogy division planned to tour the Alvarado Filtration Plant.

Exhibits were arranged by two members of the Yavapai County Archeological Society to illustrate talks they gave at a recent meeting. Alva Sims showed the arrowheads and spearpoints he had found near his home town of Lawrenceburg, Tennessee, and Miss Emma Andres displayed examples of Indian baskets and pottery work.

The May program of Dona Ana County Rockhound Club, Las Cruces, New Mexico, emphasized corundum. Alice Wollin described the mineral; Mildred Sanders listed locations; Mark Trumbo discussed formation, and Louise Trumbo outlined its commercial value.

Twenty-one members of Humboldt Gem and Mineral Society traveled to Crescent City, California where a new society was organized. Guest speaker at the joint meeting was a representative from the Eureka weather bureau.

Building plans are being discussed by Victor Valley Gem and Mineral Club which recently purchased property on Highway 66, one mile south of Victorville, California. With a frontage of 150 feet and a depth of 250 feet, the lot will accommodate a club house as well as other future additions. The club is planning a series of rummage and scrap sales and other fund-raising events.

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SAN JOSE LAPIDARIES SELECT YEAR'S OFFICERS

William Nunes was elected president at the May meeting of San Jose Lapidary Society, San Jose, California. Assisting him with club duties next year will be Lester Ellis, vice-president; Herbert Wagner, secretary, and A. B. Strong, treasurer. William Fuller will edit the *Lap Bulletin*, society monthly.

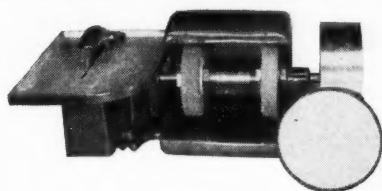
One of the highlights of the club season for Coachella Valley Mineral Society is the annual barbecue at Salton Sea. Roast pig, corn, tomatoes, coffee and ice cream are on this year's menu.

CHALCOPYRITE IMPORTANT CALIFORNIA COPPER ORE

Chalcopyrite, a mineral mixture of copper and iron sulfide, is the most important ore mineral in California, reports the Mineral Information Service of the California Division of Mines.

Chalcopyrite is brittle, brass-yellow in color, of metallic luster and may be tarnished and iridescent. Its hardness and specific gravity range from 3.5 to 4 and 4.1 to 4.3, respectively. Small amounts of gold and silver are always associated with California copper deposits.

Copper in California is mined by underground methods employing vertical and inclined shafts, drifts, crosscuts, and stopes. The Sierra Nevada deposits are narrow and steep dipping veins; in Shasta County deposits are contained in veins and vein systems of variable dip or in massive replacement bodies. Deposits containing copper



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minerals occur in many places in Inyo County, but copper is recovered as a by-product only.

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By RANDALL HENDERSON

EARLY IN May, Cyria and I spent a week in Death Valley. Thanks to the courtesy of Monument Superintendent Ray Goodwin, we found comfortable lodging in a little cabin in Cow Creek Village where our neighbors were the park rangers and other employees of the National Park Service who administer this 1,600,000-acre recreational area.

Death Valley is a fantastic place—rugged, colorful, virile. And it seems to have attracted that kind of people. We are all familiar with many of the names—William Lewis Manly, Jacob Breyfogle, Zabriskie, Borax Smith, Pete Aguerberry, Panamint Tom, Dennis Searles, Shorty Harris—and many others.

But the pioneers of Death Valley are not all of the past. Many of them are living today—men and women who have been willing to forego the luxuries of urban life for the freedoms, and the problems, of frontier living. We met some of them on this trip.

* * *

One of them is Agnes Reid, a kindly, competent woman whose Panamint Springs resort in upper Panamint Valley along the Towne Pass entrance road to Death Valley is so clean and orderly it is a delight to stop there. Her little wayside hostelry nestles among the trees of a lovely oasis—and her nearest postoffice is Lone Pine, 55 miles away.

* * *

At Stove Pipe Wells we met another courageous woman—Peg Putnam, who, since the death of her husband in 1949, has been carrying the responsibilities of the Stove Pipe Wells hotel alone. She maintains a power plant for light and air-cooling, hauls spring water in tank trucks for her guests—and despite the problems of maintaining guest cottages and a dining room in this remote place, is a gracious hostess to all who come.

* * *

Motoring along the floor of Death Valley we met Ted Ogston, chief park ranger, with a pick-up truck gathering up the beer cans and debris which invariably mark the trail of the litterbug.

Ray Goodwin, superintendent of the Monument, told me that the vandals and litterbugs are the cause of most of the headaches in the park service in Death Valley. The rangers have had to replace the "Badwater" sign which marks the 279.6-foot below sea level point in Death Valley six times—due to vandalism.

* * *

At the Castle I found Death Valley Scotty—now 80 years of age—hobbling around with a cane but otherwise none the worse for the foot disorder which sent him to the hospital in Las Vegas, Nevada, for nine weeks last fall.

Since his illness, Scotty has made his home in the Castle where Mr. and Mrs. Ringe, the managers, take good care of him. Before that, Scotty preferred the seclusion of a little cabin over the hill a mile and half away. There were too many tourists—"damned emigrants" he calls them—around the Castle to suit him. Now he is available only by appointment—but he always welcomes old friends, and while his feet are a little unsteady, his mind is keen and he takes an eager interest in all that goes on.

* * *

We stopped at the old Pete Aguerberry mine where Ambrose Aguerberry, nephew of Pete, has carried on since his uncle's death in 1945. Ambrose has leased the old mine dump for re-working, and charges visitors a small fee for taking them through the old mine tunnels.

One of Pete's last requests was that his body be laid to rest on top the Panamint ridge where he had built a trail for sight-seers—Aguereberry Point it is called. Since Pete had built the original trail at his own expense, Ray Goodwin recommended that the request be granted. But higher authorities in the Park Service ruled against it, with the explanation that "National Monuments are not to be used for cemetery purposes."

In most instances, I am in accord with the policies of the Park Service. But in this instance I think they were wrong, for Pete Aguerberry was one of the finest of the old school of men who pioneered in Death Valley.

* * *

The real pioneers of Death Valley, of course, were the Shoshones. Just why any tribe of Indians would have selected this arid region as a home is an unanswered question. The Hopis in northern Arizona did the same thing.

Perhaps they came here for freedom and independence, to avoid the competition and the warfare with other tribesmen in places where the natural food supply was more bountiful.

Fortunately, there are always human beings who will do that—to whom peace and independence are more important than lush living. Otherwise, the Southwest desert would not be as densely populated as it is today.

The patriarch of the Death Valley Indians is Johnny Shoshone, now in his nineties. Johnny hobbles about with the help of two canes, and spends much of his time loitering around the Furnace Creek Ranch service station where there often are tourists who will pay him fifty cents or a dollar for the privilege of taking his picture. All of which is evidence that Johnny Shoshone has adapted himself to the white man's civilization. And for that, more power to him.

Books of the Southwest

HE DISCOVERED TRANQUILITY DURING SOJOURN ON DESERT

Perhaps the finest thing the reader can learn from Joseph Wood Krutch's *The Desert Year* is that the wonders of Nature are best savored when they seep into consciousness gradually. Mr. Krutch did not go to the desert armed with scientific tomes on its flora and fauna nor obviously did he tour its vastness with guide book in hand. His first trips into the great Southwest desert aroused delighted interest and growing appreciation of that bemused "spell" which seems to grip many city dwellers when they first roam its sun drenched distances.

During a 15-month stay he became acquainted one by one with the desert plants and animals. His scientific background led him to philosophize on the ways in which the desert dwellers had adapted themselves to an environment that would support only forms of life which could exist in heat and sun and with little water.

However, Mr. Krutch does not like to say that "this animal or even this plant has become adapted to desert conditions. Let us say rather that they have all shown courage and ingenuity in making the best of the world as they found it." Could human beings learn a more valuable lesson?

That the "best" of the desert flora and fauna is a very good best, Mr. Krutch learned gently and gradually. He went to the desert with friendly interest and curiosity and let each plant, each animal, each superlative sunset, the silent vastness, minister to his spirit. Possibly nothing is more needed by harassed humanity today than this very ministering to the spirit.

Published by William Sloane Associates, Inc., 119 West 57th St., New York 19, New York. Pen and ink sketches by Rudolf Freund. 270 pp. \$3.75.

COMPLETELY REVISED DANA BOON TO MINERALOGISTS

For more than 100 years, students, collectors and geologists have used James D. Dana's *Manual of Mineralogy* to describe, classify and correlate mineral species. First published in 1848, the book has traveled through 15 printings. A new, completely revised 16th edition was released April 1 by John D. Wiley and Sons, publishers.

Professor Cornelius S. Hurlbut, Jr., of Harvard University has done an excellent job of revision, bringing the material up to date with all the recent developments in mineralogy. In addition to descriptions of additional minerals, a simpler nomenclature and a revised chapter on chemical mineralogy, Professor Hurlbut has added a new introductory chapter which will be particularly useful to the beginner. In it, he outlines the scope, purposes and practical applications of the science.

Dana's Manual of Mineralogy belongs on every amateur collector's bookshelf. 530 pages, numerous charts, diagrams and halftone illustrations of specimens, \$6.00.

BOOK TELLS HOW NATURE TAKES CARE OF ITS OWN

"To me," writes Roy Chapman Andrews in the introduction to *Nature's Ways*, "one of the most fascinating aspects of nature is the way it equipped every creature to withstand enemies and to obtain the necessities of life." In his new book, Dr. Andrews gives nature lovers a comprehensive presentation of natural adaptation for survival.

"The crab who uses hand grenades," "the fish with the built-in bifocals,"

"pickaback tadpoles," "the caterpillar who wouldn't grow up," "the obstetrical toad," "the caterpillar who pretends he's been eaten"—these are a few of the curious animals, birds, fish and insects which inhabit the well-illustrated text. Each has a "Believe It or Not" fascination plus genuine natural history value.

Several devices are employed by nature to protect its creatures. The Ceylonese walking leaf's amazing camouflage fools its enemies from the time it is an egg in a shriveled seed-like shell to its emergence as an adult in a body shaped and veined in perfect replica of a leaf. The rattlesnake's warning signal and the porcupine's spiny anatomy often save these animals from battle. The Gila monster stores food in its tail for emergency use in a land where forage is scarce. Speed, sight and smell are protective endowments of the bald eagle, the lizard and the yucca moth, respectively.

Nature's Ways is a book with permanent appeal for young and old. It is especially recommended for school children interested in learning more about the more unusual of the earth's inhabitants.

Each of the 140 animals described is illustrated by either a black-and-white photograph or a full-color painting by Nature Artist Andre Durenceau.

Published by Crown Publishers, New York; 206 pages; index. \$3.75.

Books reviewed on this page are available at Desert Crafts Shop, Palm Desert

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By EDWIN CORLE

A gripping novel of the Navajo people — and the problems they face in seeking to adjust themselves to the white man's civilization. Edwin Corle, long a student of Navajo life, has given a vivid revelation of the conflict that goes on today in the heart of every Navajo who leaves the reservation to attend school—a conflict in which economic necessity has virtually forced every Indian to compromise between the traditional life and religion of his ancestors, and the social and economic demands of the world that surrounds him.

The first edition of *People on the Earth*, published in 1937 has long been out of print. In 1950 a second edition limited to 1500 copies in an attractive format was printed — and only a few of these remain available.

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INDIANS • ARCHEOLOGY • LOST TREASURE

Here is a selected list of Southwestern books which are recommended for your vacation reading this summer—books which will give you a better understanding of the great Desert Land of the Southwest.

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- A3 BLOOD BROTHER**, Elliott Arnold. Vivid realistic novel of Apaches in Arizona, 1856-72. Story of Cochise and Tom Jeffords, Indian agent who worked with the Apache leader to end conflict and who became his blood brother. Also the tragic love story of Jeffords and his Indian bride. End-maps, 558 pp.....\$3.50
- A7 THE DELIGHT MAKERS**, Adolf F. Bandelier. Unusual, fascinating novel based on scientific discoveries and legends. Recreates life of prehistoric Indians of Frijoles canyon near Santa Fe, now part of Bandelier National Monument. Photos by Chas. F. Lummis. 490 pp.....\$3.00
- A12 INDIANS OF THE SOUTHWEST**, Pliny Earle Goddard. Useful, popular handbook, covering the Ancient Peoples of the Southwest, the Pueblo Dwellers, the Village Dwellers (Pima and Papago) and the Camp Dwellers (Athapaskan, Yuman). Maps, photos, biblio., index, 205 pp....\$2.00
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- A18 SPIN A SILVER DOLLAR**, Alberta Hannum. Story of Wide Ruins trading post in Arizona. Delightful account of life with Navajo, highlighted by the Indian boy artist, Little No-Shirt (Beaten Yazz), and illustrated with 12 color reproductions of his work.\$3.75
- A20 HOPI KACHINA DOLLS**. By Dr. Harold S. Colton; director of the Museum of Northern Arizona. Identifying 250 different Kachinas. Includes 55 pages of Kachina Doll heads and 8 pages of colored photos. Index. 144 pp.....\$7.50
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- A22 THE NAVAJO**, Dorothea Leighton and Clyde Kluckhohn. What are the Navajo today? How do they live together and with other races? What is their philosophy of life? A review of Navajo history from archeological times to present. Photos, index, biblio, 247 pp.....\$5.00
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